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UNIVERSITY OF ILLINOIS SCHOOL OF EDUCATION

BULLETIN No. 10

Proceedings of the High School Conference of November 20, 21, 22, 1913

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UNIVERSITY OF ILLINOIS
SCHOOL OF EDUCATION

BULLETIN No. 10

Proceedings of the High School Conference
# of November 20, 21, 22, 1913

Edited by Horace A. Hollister

PUBLISHED BY THE UNIVERSITY OF ILLINOIS
URBANA

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STATISTICS OF THE HIGH SCHOOL CONFERENCE OF 1913.

Total attendance	1100
Total registration, exclusive of the University community	982
Number of public high schools represented in Conference	284
Number of representatives of academies	6
Number of representatives of normal schools, colleges and universities registered	56
Number of institutions represented under four and five	21
Number of county superintendents present	7
Number of teachers present whose expenses were paid in full by their districts	141
Number whose expenses were paid in part	134
Number of high schools represented by delegates whose expenses were paid in full or in part	130
School journals represented	1
Number from other states	4

Registration by sections:

Administrative	203
Agricultural	35
Biology	56
Classics	103
Commercial	32
County Superintendents and Village Principals	26
Domestic Science	52
English	144
Geography	18
Manual Arts	11
Mathematics	84
Modern Language	51
Music	41
Physical Science	54
Social Science	45
Number by whom no section was given	27
Total	982

CONFERENCE COMMITTEES, 1913-14.

General Conference Committee:	H. A. Hollister, University, Chairman; B. H. Bode, University; H. L. Rietz, University; W. C. Bagley, University; A. P. Johnson, Urbana; W. W. Earnest, Champaign; J. F. Wiley, Mattoon; S. H. Dadisman, Rollo; G. J. Koons, Murphysboro; H. V. Canter, University; E. L. Boyer, Chicago Heights; B. C. Moore, Bloomington; Helena M. Pincomb, University; J. M. Clapp, Lake Forest College; J. L. Rich, University; E. J. Lake, University; E. H. Taylor, Charleston; Augusta Krieger, Highland Park; Constance Barlow-Smith, University; C. M. Wirick, Crane Tech., Chicago; Silas Echols, Mt. Vernon.
Administrative Section:	J. F. Wiley, Mattoon, Chairman, 1914; H. H. Edmunds, Clinton, 1915; W. L. Goble, Elgin, 1916.
Agricultural Section:	S. H. Dadisman, Rollo, Chairman, 1914; E. B. Collett, DeKalb, 1914; A. W. Nolan, University, Secretary, 1915; R. R. Snapp, McNabb, 1916; Lorenzo Muckleroy, Carbondale, 1916.
Biology Section:	G. J. Koons, Murphysboro, Chairman, 1916; W. W. Whitney, Chicago, 1914; Faith McAuley, St. Charles, 1915.
Classics Section:	H. V. Canter, University, Chairman, 1914; Mary L. English, Decatur, Secretary, 1915; Harriet L. Bouldin, Springfield, 1916.
Commercial Section:	E. L. Boyer, Chicago Heights, Chairman, 1914; Charlotte Van Der Veen, Joliet, 1915; Cora Pryor, Bloomington, 1916.
County Superintendents' and Village Principals' Section:	B. C. Moore, Bloomington, Chairman, 1915; G. P. Chapman, Chatham, 1914; F. A. Gilbreath, Watseka, Secretary, 1916.
Domestic Science Section:	Helena M. Pincomb, University, Chairman, 1914; Isabel Bevier, University, 1914; Alice Treganza, Bloomington, 1915; Elizabeth Stone, Decatur, 1915; Mabel Dunlap, Decatur, 1916.

English Section: J. M. Clapp, Lake Forest, Chairman; Miss Skeffington, Charleston; Miss Mitchell, Centralia; L. S. Lyon, Joliet; Miss Wilcox, Springfield; H. G. Paul, Urbana; Mr. Gordon, Rockford; C. H. Woolbert, Urbana.

Geography Section: J. L. Rich, University, Chairman, 1914; D. C. Ridgley, Normal, 1914; H. M. Clem, Chicago, 1915; F. W. Cox, Lawrenceville, 1915; James H. Smith, Chicago, 1916.

Manual Arts Section: E. J. Lake, University, Chairman, 1914; Clara E. Ela, Normal, 1914; Anna G. Brown, Jacksonville, 1915; A. P. Laughlin, Peoria, 1916.

Mathematics Section: E. H. Taylor, Charleston, Chairman, 1914; C. A. Pettersen, Chicago, 1915; E. B. Lytle, University, 1916.

Modern Language Section: Augusta Krieger, Highland Park, Chairman, 1915; T. E. Oliver, University, 1914; Blenda Olson, Macomb, 1916.

Music Section: Constance Barlow-Smith, University, Chairman, 1916; Otto W. Miessner, Oak Park, 1916; Mrs. Elizabeth McNair, Mattoon, 1915; Ailsie E. Goodrick, Jacksonville, 1914; W. D. Armstrong, Alton, 1914.

Physical Science Section: C. M. Wirick, Chicago, Chairman, 1916; F. R. Watson, Univeristy, 1915; J. P. Drake, 1914.

Social Science Section: Silas Echols, Mt. Vernon, Chairman, 1914; U. S. Parker, Quincy, 1915; L. M. Larson, University, Secretary, 1916.

Special committee to confer with regard to a general science course for High Schools: *Administrative Section,* W. L. Goble, Elgin; *Agricultural Section,* W. L. Eikenberry, Chicago; *Biology Section,* J. L. Pricer, Normal; *Domestic Science Section,* Miss Mary Moore, Chicago; *Geography Section,* H. M. Clem, Chicago; *Physical Science Section,* H. S. Pepoon, Chicago.

EDITORIAL COMMENT.

In harmony with the suggestions presented at the Saturday morning session of the Conference we have taken the liberty of changing the terminology of some of the papers. For instance we have substituted "program of studies" and "curriculum," as the sense seemed to indicate, where "course of study" was used indiscriminately. In the naming of high school grades we have used "ninth," "tenth," "eleventh" and "twelfth," or "first," "second," "third" or "fourth year" instead of "freshman," "sophomore," "junior" and "senior."

The general character of the reports of the various meetings, from an editorial point of view, is an improvement over that of last year. There is still need of insistence on the part of committees, in arranging programs, that a carefully written (typed) copy be furnished the secretary WITHOUT REQUEST FOR RETURN. This copy should be ready to hand over AT THE TIME OF THE SESSION AND AS SOON AS READ.

The general policy in editing these proceedings is to preserve a record of all essential facts, whether of business details of proceedings or of reports and discussions. It is doubtless true that some of the material published has little intrinsic value. But the entire presentation may be taken as a fair index of the present situation of a particular subject with regard to its teaching in our high schools, or the existing status as to administrative problems. If the proceedings of any Section for a given year do not measure up to what the committee may believe to be the existing standard it should be the business of the committee to see that this is remedied at the next session.

We cannot emphasize too strongly the need of prompt committee action if the work of the Conference is to proceed in a progressive way. Nothing can be more fatal to the purpose of such a gathering than to wait until fall and then hurriedly collect the numbers for a "program." In this respect a conference, if it be a conference, must differ from the ordinary type of teachers' meetings with which we are all familiar. It is the thoroughgoing ATTACK MADE UPON PROBLEMS that furnishes the real MEAT of our Conference Sessions.

PART I.

GENERAL SESSIONS.

First Session, Thursday, November 20, 1913—7:30 *P. M.*

The ninth annual meeting of the High School Conference of the University of Illinois convened in Morrow Hall at 7:30 p. m. and was called to order by Professor Horace A. Hollister, High School Visitor, who, after welcoming the teachers present, making several necessary announcements concrning the various sectional meetings, and pointing out items of special interest at the University of Illinois open for inspection by the visitors, invited to the platform and introduced to the audience John Calvin Hanna, formerly principal of the Oak Park Township High School and now an assistant in the office of the State Superintendent of Public Instruction.

Mr. Hanna said in part: "I believe that the rapid development of the High School presents the most important educational problem of the hour. Its coming has added fifty per cent to the meaning of education. There is work enough in this field for a half dozen supervisors of High School education. I am ready to co-operate with any and all agencies in the State of Illinois for the betterment of the schools."

Then followed the regular program. The topic for the evening was "College Entrance Requirements as Related to High School Progress in Illinois." This subject was ably discussed by Principal F. M. Giles, DeKalb, Dr. E. B. Greene, of the University, and Principal J. O. Marberry, of Robinson. Abstracts of the three addresses are here given. Mr. Giles emphasized the topics as given in the following outline:

"We hear a good deal in these days of the repressing effects of college entrance requirements on the high school. However, college entrance requirements have been a direct and positive benefit to the high school in a great many cases. This must be admitted by all thoughtful men.

"Our own state university has stood well in the forefront of progress in the matter of adapting its requirements to the needs of the high school. The topics presented tonight are not a criticism of requirements, but a consideration of some changes which would be beneficial to the high school.

"College entrance requirements effect high school progress, in general, in two ways:

A. By stimulating or repressing individual endeavor among the students, and

B. By stimulating or repressing progress in the high school as an institution.

"It is a safe step in advance to give a greater percentage of credit along vocational lines. A student might be allowed, with safety, to offer one-quarter of his work in vocational subjects. This allowance would be beneficial to students in agriculture, business work, engineering, domestic science. This is not over-specialization, but a legitimate recognition of vocational work.

"Entrance requirements should require that a student's courses should be grouped around a student's dominant interests. In other words, a free elective system is not productive of the best kind of scholarship. One of the best elements of the old classical course was its continuity in four years of Latin, three years of mathematics, etc. A similar continuity should be demanded in our courses today. We should require a student in science to take three years of science, a similar amount of history, etc.

"College entrance requirements would stimulate a high school student to a better grade of scholarship if they recognized ability and initiative as well as the completion of a quantitative amount of work. These studies of high school marks have put us in a position where we can recognize ability with safety. We might say, for instance, that the upper third of the class should receive ten per cent additional credit for their work. Some high schools in the state, of which DeKalb is one, are giving additional credit. We need, however, university recognition of this system of crediting.

"No one requirement, except English, is essential for college entrance, because no one subject furnishes a test whereby a student who can profit by college work can be selected. For instance, does algebra or solid geometry furnish a test whereby we may know that a student is fitted for college? The recognition of all 'round ability is a far better test for this purpose.

"College entrance requirements might help control the student who is at school for social reasons. No high school wishes to be judged by this class of students. Some system should be devised whereby a high school might indicate the aim and purpose of such students as shown by their high school record.

Entrance requirements should recognize the right of the high school to meet social needs. That is, it should leave a certain flexibility in its demands."

The following is an abstract of Dr. Green's address:

"In discussing the various propositions now before us looking toward greater flexibility in college entrance requirements it is important to keep in mind the fact that very marked progress has already been made in this direction. The change of academic standards in this respect may be illustrated by an examination of the catalogs of the older eastern institutions half a century ago. The Harvard catalog of 1848-49 requires examinations in Latin, Greek, Mathematics, and Ancient History; there is no provision for choice on the part of the candidates; and the requirements include not only general statements as to the subjects to be covered, but also certain enumerated text books. Especially notable is the entire absence from these requirements of English, which now occupies so important a place in college entrance requirements.

"If we turn to the requirements of the same institution in 1911-12, we find the list of specifically prescribed subjects strikingly reduced. Either Latin or

Greek may be omitted for the degree of A.B., and neither subject is required for the S.B. degree. Of the old list algebra and geometry still remain and some history which need not be confined to the ancient field. Added to the list of prescribed subjects are English and the natural sciences. In the list of elective subjects which may be accepted for the A.B. degree appear such studies as economics, drawing, and music, while candidates for the degree of S.B. may offer one point each in wood-working, blacksmithing, and machine-tool work. Still more striking is the offering of an alternative new plan for admission, limiting the number of examinations required and accepting in partial substitution for entrance examinations certificates from high school principals. There is a general requirement that some work must be included in each of certain fundamental groups of subjects; but these requirements once met, any subject accepted for graduation in an approved high school may be credited.

"In the state universities of the Middle West the departure from the older traditions has naturally gone still farther as may be seen in the case of the University of Illinois which, in 1911-12, included in the list of requirements for admission to all of the colleges of the University, only English and mathematics. In the College of Literature and Arts which may be considered most subject to the influence of traditional views the only additional prescription was one unit in history, and three units in foreign languages which might of course be either ancient or modern. Among the electives which might be accepted in limited amount were such varied subjects as agriculture and book-keeping.

"It is evident then that we have traveled a long distance on a road to that flexibility which is now demanded by the educational radicals of the present time. Now the question is raised whether there should be any college entrance examinations at all in the strict sense of that term, or in other words whether the colleges should content themselves with a general agreement to accept the graduates of any good high school who have completed a four years course made up of such subjects as may be accepted for the high school diploma.

"Possibly it may be best at this time to investigate with some care the advantages and disadvantages of the movement toward flexibility in its present stage of advancemnt before deciding that we should go on indefinitely in the same direction or accelerate the pace at which we are now moving. In education as in politics it is not so certain as the man in the street may think that permanent progress lies always in the direction in which the current appears to be running at any given time. Even a limited knowledge of the history of educational theory is sufficient to show that movements that have bulked large in the opinion of contemporaries have proved to be of no permanent significance. It is certainly in the interest of safe educational progress that questions vitally affecting for better or for worse the conditions under which the high school graduate is to enter the college should be settled neither by the college independently nor by the high school independently; but by some such method of conference as that to which we here are now accustomed. Just now the influences which tend to shape the high school programs are emphasizing the value of the newer subjects and especially those which are thought to prepare the pupil specifically for particular vocations or professions. I have no quarrel with the contention that vocational subjects may fairly receive more general recognition than was given to them in the past. Is it not, however, possible that in laying so much stress on these studies which prepare the pupil to earn his own living, studies which differentiate him from his fellow citizens engaged in other occupations, this specialized training may be developed at the expense of that other vital function of education, the function of transmitting from generation to generation the common inheritance of civilization?

"Again, although we are all ready to concede that the high school must provide, generally, for the large body of its pupils who never go to college at all and that the college entrance requirements should be framed with this fundamental fact in mind; nevertheless, the college does have a definite function to perform and cannot altogether ignore the relative value of different subjects as a preparation for college work. Something is still to be said for the right of the college to set such requirements as are necessary to make its own work efficient. In the case of engineering, for instance, it is obvious that thorough mathematical training is essential unless the work of that college is to be lowered to the level of a mere trade school. Not so obvious, perhaps, but equally important, is the fact that many of the literary subjects cannot be maintained on a university level unless the college can assume a certain preliminary training not only in the particular subjects taught, but in those divisions of knowledge which are closely related to the main subject. For instance, the university student of modern languages labors under a fundamental disadvantage if he has had no background of classical study. No one can be anything but a narrow and provincial student of English literature if he knows nothing first hand about the literature of any other country. Teachers of history are keenly conscious of the difficulties of getting the best work from students who have had no classical or other linguistic training. It must be remembered also that we cannot weaken the character of college instruction in these subjects without in the end reacting unfavorably upon the high school itself, which must more and more depend upon college graduates for service as teachers. Even the school authorities who are most insistent in their demands for a relaxation of college entrance requirements may find themselves turning from the colleges which have surrendered wholly to this contemporary demand, to those which by insisting upon adequate preparation for university studies are able to provide teachers of superior scholarship.

"The subject in all its bearings is much too large to be adequately discussed within the limit imposed by the present program. May we not, however, fairly ask whether the time has not come for us to undertake a thorough-going investigation of the educational effect of the changes which have already taken place? However valuable may be the new subjects which are urged from time to time it must be remembered that many of them have not yet been adequately organized for teaching purposes. How do the high school graduates under the new arrangements of the present time compare with those who left the schools when they were administered on principles which may seem to us hopelessly old fashioned? The advocates of the old order have been forced to abandon the too common attitude of complacent acquiescence in purely traditional programs. Should not the newer studies be subjected to an equally exacting test in terms of educational efficiency measured by quality of out-put? Until such an investigation has been seriously undertaken and carried through we can afford to wait before taking action on isolated propositions which by their cumulative effect may modify our educational ideals to an extent not easily appreciated in the consideration of any individual proposal?"

Mr. Marberry came next with the following paper:

"It has been said that education does two things: it makes people alike and it makes people different. The purpose of the elementary school is to make all people alike. The program represents the common experiences necessary for all members of the social group. The work done should represent the minimum of instruction to be possessed by all for general needs. It does not distinguish to any extent between individuals. This tends to make all alike. At the other extreme of our educational system stand the college and university. Here we find little of common instruction for the social group and much instruction for the individual which we are pleased to call specializing. This tends to make people different. Between these extremes stands the high school. It is less social and more individual in its instruction than the elementary school and more general and less individual than the college and university.

This leads me to say that the high school today is in an important stage of its evolution. It represents the transition from the general education of the elementary school to the special training of the college and university. It is a new institution, thoroughly democratic and much is required of it by the people many of whom regard its work as having the same general nature as that of the elementary school. These people make no greater mistake than do some colleges that insist on work being done with the view only of admission to their courses. How to harmonize these conflicting interests is the problem of the secondary teacher.

There need be no conflicting interests between community needs and the college. The University of Illinois and the high schools of the state are but parts of one educational system. The standard of the high school for graduation should be the standard of the college for admission whether the graduate enters college or not. The standard of the college for admission should not be fixed by the college but by the college and high school. The standard for graduation from the high school should not be fixed by the high school, but by the high school and college.

"We of the secondary school have found ourselves beset with so-called community needs on one hand and on the other hand by so-called college dictation. Time was in many places in Illinois that for one to set himself too firmly in favor of college entrance requirements was equivalent, in the opinion of many, to opposing the best interests of the community. One of the first questions asked me once on the occasion of my applying for a principalship was regarding my attitude toward the dictation of the high school program of studies by the University of Illinois. I answered by saying that I was willing to submit meekly to all the dictation I had ever received. That school today dismisses for this High School Conference and the Board of Education insists on all the teachers attending in order that more and more of this wholesome dictation may be received.

"I am not saying that the high school shall follow blindly college entrance requirements, neither am I saying that the college shall throw its doors wide open and accept for entrance all work that all communities may see fit to have done. I *am* saying that we should get together as we are getting together and work out these problems in a sane, sympathetic spirit of co-operation. To me this is not a question of you in your small corner and I in mine working away at the problem from our limited, selfish, narrow view-points, but it is a question of your duty and my duty toward educational conditions in the state, our duty toward every high school in the state, our duty toward our state university and toward every other college and university in the state that is ready to co-operate with us in working out a satisfactory solution of the problem. I take the position that a teacher is not fit to teach in a high school unless he has a broad, sympathetic outlook into the life the pupil will live who does not go to college and unless he knows something of the work of the college. Neither do I believe a man is fit to teach in a college unless he has a sympathetic view of the work of the high school.

"I am not as thoroughly convinced as some regarding the specific needs of certain communities as distinct from the needs of all communities. I realize that there may be exceptions. One of my teachers told me this week that he spent a lot of time studying in detail his home geography while in the grades and that he left that place after finishing the elementary work and hadn't been back since. If in my community every one stayed and no outsiders ever came, the problem would be different. But education is essentially state wide in its nature and should apply to all needs of the state as far as possible.

"There are two plans of admission to college, by diploma and by examination. It seems that the tendency on the part of those that accept the certificate from the high school is to admit a wider range of subjects than those that hold to the examination. For example, Wisconsin recognizes 26 subjects for admission, Illinois 27, Minnesota 29 and California 30. This is an average of 28. Yale, Princeton, Harvard and Columbia that hold examinations, average 17. The difference is due in part to the recognition of vocational subjects by the state universities. This, to me, signifies progress for the high school. And yet it is possible that herein lies a danger. I shall not enter into a full discussion of the practical versus the cultural subjects. I doubt if there is as much difference between the two groups as we think. After all has been said the practical subject is cultural because that which fits a boy for his chosen work at the same time contributes to society a well-prepared member and is thus cultural.

"Mr. Ryan of the department of Education at Washington in a recent survey of the educational situation has this to say regarding vocational training. 'Rightly or wrongly, the American is instinctively repelled by any diversification of educational aims that result in widely differentiated strata of society. He feels that separation of pupils in different schools involves discrimination. He not only demands equality of opportunity in education, but a certain fundamental similarity of education, experience and actual intercourse up to young manhood and womanhood, to insure like aims and ideals in the wider democracy of which the school is at once a model and a part. It is instinctively felt that if boys and girls from different living groups get together in the public high schools they will be much more likely to get together in life. Any movement for vocational education, therefore, which even appears to ignore this spirit, is apt to run the risk of being accused of interference with the school's duty toward democracy.' I believe that the progress of the high school depends to some extent upon the further introduction of vocational work, but this should not be done at the expense of the cultural subjects.

"A discussion of this subject should take into consideration the attitude of the colleges of the state toward the high schools. There are colleges that want good students but are not definitely interested in the work of the secondary school. There are colleges that want good students and *are more or less* interested in the high school. It may be that a few colleges remain that are willing to take any kind of students the main thing being to get students. Lastly, there is the higher institution that looks upon the high school as a part of its own system of education. It is needless to say that this school and other colleges cooperating with it and with the high schools are the ones that are contributing to the progress of the high schools of the state.

"In this connection I wish to trace briefly the history of the Univeristy of Illinois regarding entrance requirements. This history is familiar to all but is worth repeating at this time. The first step was taken in 1873 when county superintendents were authorized to hold examinations for admission to the University, but the matriculation papers of the student were withheld till he had passed the regular examinations of the first term of attendance. A few years later a preparatory department was established which was abolished (and wisely so) in 1911. Two steps were taken in 1877: examining schools, one or more in each county, were empowered by the faculty to set questions and hold examinations, but the papers were graded at the Univeristy. Other schools were designated 'Accredited High Schools.' These could certificate pupils to any of the colleges for which their studies prepared them. This affiliation lasted as long as the work done was satisfactory. In 1896 a high school visitor was appointed. It is not necessary that I review the help that has come to us in the high schools under this inspection by the University. I simply refer to it in order to say this: the people of this state are paying millions for the support of the University. They ought to pay more and they will pay more, but their willingness to pay more would be augmented many times if they could have more of the work of the Univeristy brought to their own communities. In this matter of inspection, instead of having one inspector there should be one or more assistants. Instead of coming to my school every two or three years an inspector should come at least once each year. Instead of being compelled to stay only a few hours he ought to stay several days. He ought to have time to inspect the work of every department of the school thoroughly. He ought to hold conferences with the teachers. He ought to meet with our Board of Education. He ought to address our people. Definite courses pertaining to the needs of the secondary school should be worked out during the year by representatives from the Univeristy and the principal or superintendent with the teaching force of the high school. Credit might be given by the Univeristy for the completion of such courses by those who wish it.

"The progress of the high school is hindered by the fact that in four years a complete transformation must be made in the process of instruction. I am thoroughly in sympathy with the movement to shorten the work of the elementary school to six years and the lengthening of the high school course to six years divided into the junior and senior schools of three years each. In addition to this I believe the first two years of the college work should be done at home or near home instead of having the work center in one institution. The state should be divided into districts and through state aid the work of the junior college should be done in these centers, the graduates being admitted to the junior class of the college. This plan might make it possible for the work of the college to be of university grade.

"I am principal of a township high school in Crawford county. There are three other high schools in the county and for two years we have been working along the line of unification of the high school work of the county as recommended by the County Superintendents' and Village Principals' section of this conference. We had our county Institute last week and several periods each day were taken by the high school section working out our own problems. I mention this because it has to do with college entrance requirements and the progress of the high schools of our county. Our courses are unified. Our next meeting will be held in February and we have invited our Boards of Education to meet with us. They have accepted the invitation and we hope to have the high school visitor present. To illustrate the high school spirit in that county, I wish to say that one of the three smaller schools is a township high school under the 1911 law. There was never a thought last summer of turning back. The directors of the various districts got together and decided to go right ahead with the high school and that school will continue whatever the future may bring as to the form under which it will operate. Indications point strongly to the establishment of another township high school in the county before next September and a village is planning to add two years work to that of the elementary school.

"I close with the following from Henderson's Admission to College by Certificate: 'The service rendered by the colleges to the schools has not been limited to counsel concerning the selection of subjects; it has extended to equipment and method. More than a score of state universities have issued high school manuals. These manuals are usually prepared by college teachers who have had experience in high school work; thus two standpoints are held in mind in the suggestions made. These manuals are more suggestive than prescriptive. For illustration, much larger number of classics, laboratory exercises, units of work and subjects are suggested than are required for admission. The schools may make modifications, adaptations or substitutions. Under such conditions methods of teaching may be improved and based upon interest rather than upon an extrinsic basis or the preparation for the ordeal of a college entrance examination. In the benefit of the change colleges as well as schools have shared. Good teaching in colleges leads to better teaching in the high schools, and better teaching in the schools spurs to improved methods in the colleges; and, where the higher and the lower parts of the system are united the instruction in both tends to be improved by the contact of one with the other.

"In recent years the method of working by conference has grown in popularity. The same principle may be applied between teacher and student in the class-room, between university visitor and school superintendent, between committees representing both the colleges and the schools or even in the large assemblies where high school representatives and college instructors are gathered together. Here the idea of authoritative domination does not control; but, free discussion is allowed. Under such conditions the search for truth becomes a cooperative undertaking. Many of the certificating institutions hold annual high school conferences. The conference in Illinois has sometimes had a thousand high school teachers in attendance. The meetings are held at the University of Illinois, and, probably no other influence in the state has done more for the elevation of standards and the adoption of better methods in teaching. But for the close contact between the schools and the Univeristy through certification, the organization would probably not be in existence'."

After the formal presentation as given above, general discussion followed.

Principal Sandwick of Higland Park said that the University did not differentiate with enough seriousness in certain subjects as history and household science, the work done in the University being much like the work done in the High Schools.

Principal Briggs of Rockford raised the question, "Why require advanced Algebra and Geometry of all pupils in the High School?"

He believes there is no more justification for the teaching of these subjects than there is for the teaching of Latin and Greek. He favors allowing liberal credit for commercial subjects.

Superintendent Ernest of Champaign presented the following resolution, which was adopted:—

> Resolved: That it is the sense of this Conference that, except in the cases of students desiring to pursue in the University courses for which a knowledge of mathematics is a necessary basis, nether a third semester of algebra nor a third semester of geometry should be included in the requirements for entrance to the University.

Principal Morgan of Wood River, presented the following which was adopted:—Resolved, That it is the sense of this body that two years of Household Science credit be given for entrance.

The meeting adjourned to Friday evening.

Friday Evening Session.

The second general session of the confernce convened at 8 o'clock, Friday evening, November 21, in the Auditorium. Dean Kendrick C. Babcock presided at this meeting.

The general program presented at this session was of high quality and proved to be one of the best meetings of the session. The addresses of the evening were preceded by a splendid concert given by the University Band under the able Director, Mr. Harding.

The topic for the evening,—Physical Education and Health, was presented by Dr. Florence H. Richards, William Penn High School for Girls, Philadelphia, and Dr. E. A. Peterson, Public Education Department, Cleveland, Ohio. Abstracts of these addresses follow:

Physical Education and Health.

Dr. E. A. Peterson.

"I always expect to be rather apathetically received when I speak on this topic of health. People don't seem to be very enthusiastic about health and I have wondered why. Statements such as 'The Conservation of our *vital* resources is the greater part of the big problem of conserving national efficiency' and 'Of the 65,000 school children who died last year 40,000 died of diseases which are preventable,' just 'splash' off and we go our old way.

"I have thought that a part of the cause of our lack of interest is due to health teaching or health preaching which has been the rule in our Public Schools and which is illustrated by the means used by one of my own teachers. We had come to that part of the physilogy lesson where the danger of alcoholics was to be taught and this teacher wishing to make a deep impression broke into a dinner plate a hen's egg upon which she poured alcohol. After the albumen had sufficiently coagulated she picked up in her fingers the hardened egg, saying, 'There children, that is what alcohol does to your stomaches.' I was terribly impressed and remained so until 'Mickey,' a friend, gave me a friendly punch and said, 'H—l Pete she's stuffin us; my fodder's drunk fer twenty years an he kin eat nails.'

"The teacher had told us something about health which was not in accord with facts and all her teaching on health after that partook of the flavor of the lesson drawn from her experiment. We have been taught so many untruths about health that now whenever anybody rises to speak on that subject we fold our arms, get comfortably fixed for a nap and placidly 'opine' that there are more falsehoods coming. It is a credit to our judgment to see the statements in all our later works on Education to the effect that our health teaching has been a failure and that we must develop a new technique of 'getting across' knowledge of hygenic living habits.

"Another reason for our lack of interest is that, until very recently, our health leaders have been so busy curing diseases that they haven't had time to study the causes of disease, so busy 'fishing us out of the stream' that they have had no time to go up and see 'who was pushing us in,' with the result that despite the efforts of medical men, diseases have so increased that now our common salutation is 'How do you do' implying that you are lucky if you are not sick. This condition has also brought about the acceptance of a 'norm' of health which is deplorably near the 'sick' line, a 'norm' which warrants the definition of health as given by 'The Junior Office Boy'—'Health is w'at you got left after a sick spell.'

"We do not seem to realize that there are 'heights' which may be reached in 'living' of which we know too little. Munsterberg asserts that 'we could accomplish twice as much as we now do in our work if we only would practice the laws of personal hygiene which we could all know.' You all know men who are able to work at great speed, to concentrate for long periods, who seem to know no fatigue. They are living on the 'high levels.' I know a surgeon who comes down to his operating rooms, operates all morning, goes off to another hospital and operates all afternoon, then sometimes operates all night, but gets down to his office that morning eager to 'get at' some research work he is doing. A slight affliction such as a cold does not seem to bother him because he has stored up somewhere enough energy to combat the cold and do good work at the same time. You ask that man 'How he is' and he replies 'Fine, ready for anything.'

"Most of us live on 'levels' which we call normal, a 'bad cold' puts us under the line and we are sick. The ordinary salutation is usually met by 'Oh, just tol-ble, can't complain much.' Two hours good hard brain work causes such fatigue that further work is inaccurate and unsatisfactory; only 50 per cent efficient most of us.

"Then there are people who live at a very low level as indicated by the reply to our 'Good morning! How are you Aunt Nancy?' 'Well, its jes like this, when I do feel good, I always feel bad cause I know I'm goin to be wuss afterwards.'

"Discoveries of the last few years have forced upon us the necessity of giving much thought to this problem of securing for our people good health. Prof. Fisher's investigations indicate that last year 1,600,000 people died in the U. S. and that of this number 670,000 died of reasonably preventable diseases and that these deaths represent an economic loss to this country of over a billion dollars. That there are approximately 3,000,000 persons seriously ill all the time in the U. S. Illness losses based on estimated loss of wages and cost of private and public care of the sick are about $500,000,000 each. Besides all the inconvenience and suffering we have a largely preventable money loss in deaths and illness of approximately two billion dollars annually.

These estimates are conservative and are made after great study and research. They are not haphazard guesses.

"With a feeling that these things were taking place a long time ago, the adoption of a course of study in physiology and hygiene was urged as a means of bringing about better health. We are now forced to admit that such courses as they have been presented have been failures; somewhat later physical training was introduced because its advocates maintained that it would make all the weak strong and do away with 'school disease' consequently absences and retardation. It has done no such thing. Later Medical Inspection was added and while beneficial results have been noted it has not been able to accomplish all that has been claimed for it. Close students of the progress of health administration are beginning to see that in order to obtain good results all of these movements must be corelated and conscious thought given to the actual practice of health habits.

"We have been so interested in becoming civilized that we have not had time nor thought to give to the necessity of compensating for the great changes in our environment which civilization has brought with it. Civilization forces us to wear clothes, live in houses, breathe bacteria laden air, eat prepared and predigested foods, expend an increased amount of nervous energy while we largely do away with muscular work, thus changing our environment with reference to certain fundamentals which we must take thought of if we are to survive as a race. The conditions under which our bodies were given their present shape, size and structure were very different, and applying the old biological law that a body tends to function best in the environment in which it was produced we begin to see the importance of a reconstruction of our present living conditions.

"The early life of man was very largely made up of muscular activity; at first it was in actual physical combat, later in the chase, then war and later still in labor in the fields; during a long period the very life, the existence of the race depended on neuromuscular ability. Dr. Gulick points out that the maintenance of the fullest functional activity of the organism depended on the *balanced* co-ordination of musclse, heart and lungs and nervous system; and that the very large part in this balance played by the muscles is indicated by the present size, shape and function of the organism. A comparative anatomist on examining a human body would see at once that because of the size of muscles and bones they were developed by a very active life. The heart and lungs are developed to care for the blood of an active organism and the nervous system was developed by a life necessitating a large number of nervous impulses.

"In those early days man lived in the open where what disinfecting was needed was done by the sun and the winds took care of ventilation. The air he breathed was pure and relatively free from bacteria and dust and activity was the chief thing in his life. These conditions which formed the individual are the conditions under which we can expect the greatest efficiency of that individual.

"Let us consider for a moment the extent to which we have changed this normal environment and we will in those terms have very largely stated our health problem. I do not mean to say that it will be necessary to go back to savagery in order to be healthy, but there are certain fundamental things in the life of the savage which we much carry over into our civilized life if we are to be most efficient. The great change in our environment has been brought about by the invention of the steam engine, factory work and urbanization of our population. There is now machine power represented by an engine of 12 horse power for every male adult in this country. Manual labor is rapidly disappearing and instead there is being demanded skill and ability to manipulate machinery. Compare the large amount of muscular activity demanded by farm work and that demanded by caring for a machine, sitting in an office, clerking or teaching and you will see at once the extent to which we have changed our environment with reference to activity. In 1800 only 4 per cent. of our people in the U. S. lived in cities while in 1900 more than 50 per cent. were city dwellers. We have compelled our children whose every instinct calls for action to sit for five hours per day in unhygienic schools. In 1850 our school population was 2,500,000. In 1900 there were 15,000,000 children enrolled in our schools. One-fifth of our population placed out of the environment best suited to it and at a time when it is most susceptible to a changed environment.

"We have perfected our postal system, invented the telgeraph and telephone which makes it possible to transact many times the amount of business done under the old environment, but with a corresponding increase of nervous energy, while the expenditure of physical energy is confined to taking down the receiver, writing a telegram or licking a stamp. The normal balance in the expenditures of neural and muscular energy has been greatly disturbed. We have adopted clothes, moved into poorly ventilated houses where the sunlight never gets. We eat poor foods, live in an atmosphere containing in cities about 30,000,000 bacteria per c.c. as against 2,000 in the country, and have adopted measures which allow the weaklings to grow up to maturity, marry and reproduce their kind.

"A study of the earth's crust has shown us that the most highly organized mammals are most susceptible to change in their environment and that many animals coaeval with man, have become extinct because of their inability to cope with a changed environment. We very naturally would expect that this great change which has come about in the environment of man, the most highly organized mammal, would produce some great changes in man himself, and while we may not have recognized it as such, much evidence of physical deterioration is at hand.

"The Interdepartmental Committee on Physical Deterioration in Great Britain found abundant evidence that the Englishman is deteriorating physically. Three out of five men examined by the army surgeon for the Boer War were found so defective that they had to be rejected despite the fact that the requirements have been greatly lowered. For instance, the requirment for height in 1845 was 5 ft. 6 inches, while in 1900 it was only 5 ft. The Committee reported that 'In England, degeneration is especially manifest; in Manchester and other manufacturing districts the police force is largely recruited from country districts, it not being possible to find enough men who are large enough in Manchester and Salford.' Similar findings have been reported by A. Watt Smith in his 'Physical Deterioration, Its Causes and the Cure,' and by Sir Wm. Taylor, and Mr. Gray, a member of the Anthropological Institute. Other indications of physical deterioration brought out by carefully compiled statistics of large insurance companies are now being made known.

"Examination of school children shows that probably 80 per cent. of all our children are actually suffering from defective teeth. German authorities report that 90 per cent. of their school children have defective teeth while in England only 1 per cent of the children over 11 years of age have sound teeth. Dr. Cunningham, the great English Anatomist, says, 'It is an obvious fact that the teeth of the people of the present time cannot stand comparison in point of durability with those of the earlier inhabitants of Britain. Those who have the opportunity of examining ancient skulls cannot fail to be struck with this.'

"We are gradually becoming a toothless nation and in a short time it may be just as fashionable to have all our defective teeth removed as it is now to part with our apendices. The alarming increase in insanity and feeblemindedness is another indication as well as a cause of physical deterioration. There are about 150,000 insane receiving institutional care in the U. S. today and probably as many more not cared for.

"In New York in 1867 the ratio of insane to the normal in the population was 1 to 1600. Today it is about 1 to 275. There can be no doubt but that insanity is on the increase and in some sections the increase is so rapid that as the Superintendent of an institution in Texas put it, 'If the present rate keeps up it wont be long before there will be so many insane that they will break out of the asylums and put us in.'

"There are about 300,000 feeble minded persons in the U. S. today and because of the fact that feeblemindedness is passed on from father to son as well as that there is a tendency to develop it under certain conditions, it is increasing very rapidly. Dr. Davenport says that feeblemindedness has doubled in New Jersey in a single generation. Other indications of deterioration are found in the spread of the cancer plague from which 75,000 persons died last year and which has increased 500 per cent in the last 60 years, in the increase of eye, ear, nose and throat defects; in the mortality from such chronic diseases as arteriv-sclerosis, diabetes, Bright's disease, etc., which has doubled in the last 30 years; and to some extent the falling birth rate.

"Our lives too are becoming shorter despite the fact that our average length of life in this country is shown to be increasing, due however to the saving of young children very largely. The actual number of old men and women is decreasing. We have in this country 1 centenarian to each 25,000 of our population while Bulgaria has 1 to each 1000, while France has 1 to each 190,000, England 1 to 200,000, and Germany 1 to 700,000. We have set the normal length of life at 70 years while if we accept the formula applied to other animals such as Flouren's law which says that the normal length of life is 5 times the growing period we would live to be 125 years of age. Haller a distinguished Swiss Physiologist of the Eighteenth century thought that man ought to live to 200 years. While it may not be that we can realize Haller's dreams, it is the concensus of opinion of students of hygiene that we have accepted as normal a too short life.

"In summing up his investigations on physical deterioration, Dr. Wiedersheim, the great comparative anatomist of Freiburg, says that 150 different organs in the human body are in a state of degenerative change. Realization of these facts has compelled that thought be directed towards preventing further decay, preventing the degeneration of the race to the level which Galton calls the grade of 'trained idiocy.' Generally speaking the cause of these signs of degeneration may be stated as the transplanting of man into an environment which is not conducive to his best life and the solution of the problem, broadly speaking, again, is to first determine and then carry over into his civilized life those fundamental features of the environment which produced him.

"Dr. F. B. Dresslar (U. S. Bureau of Education) speaking to The Fifteenth International Congress on Hygiene and Demography said: 'When people have pure food, pure water, pure air and are freed from the dust of houses, streets, and manufacturing industries; when they have good light and abundant sunshine, sanitary houses, barns, and outbuildings; when they are protected from germ-carrying agencies, such as flies, mosquitoes, rats, mice and all such pests; when they are protected from people who are carriers of disease germs, and taught how to disinfect their homes and communities; when they are taught to work and play, eat and sleep, dress and bathe, according to the laws of health; when they learn to care for their teeth and their eyes, the main problems of hygienic living will be solved and human life relieved of its greatest sources of suffering and disease.' If Dr. Dresslar had only added ideals which would allow only the physically and mentally fit to mate, I think his proposition would have been complete.

"We face then as a general problem the restoration to civilized man of the fundamentals in man's early environment. The public school's share in this restoration is very great and growing, due to the lack of efficiency of other institutions for such a purpose, and to the fact that such a large share of health mal-adjustment is due to health ignorance, and the lack of adequate health habits and ideals which it is so largely the special function of the public school to replace with positive health qualities.

"Physical Training ought to be brought up to date, given new life and extended; free play ought to be furnished; Instruction in hygiene ought to be more sanely given and medical inspection ought to be enlarged so as to reach adequately every child in schools and by close co-operation of these agencies a technique must be developed which will bring about the actual practice of health habits. With reference to Physical Training we are laboring under some delusions which ought to be dispelled. The first is that there is something in the ordinary physical training lesson, some elixir of life, which, rejuvenates and dispels fatigue to such an extent that a lesson on Monday will last over until another lesson on Thursday. It is a twin sister to the delusion that 5 minutes exercise in the morning and again in the evening is enough to supply the needs of the body. To the extent that these things supplant the real thing they are bad. It is not enough to spend 10 min. per day nor 45 min. twice per week; adequate exercise can be obtained only by spending several hours each day in the open at moderate exercise so that instead of attempting to crowd enough exercise into a few minutes to last for a week our physical training periods should be used to create such desires and ideals as will bring about much life in the open. Here a new technique must be developed. A constructive play program ought to be adopted, one which has for its aim the furnishing of opportunity for the development of fundamental instincts, at the same time large muscular activity leading into a later active life. It is absolutely necessary under the conditions which exist in this country, that we teach children to play.

"Some one has well set forth the reasons why our health teaching has failed as follows. 1. We have given incomplete study to the psychology of the subject. Interests centers around health as a means of attaining strength, beauty and efficiency and not in health itself. 2. There has been a poor selection of material for the work. Too much human anatomy and physiology has been taught. Too much studying of one's own body; Saleeby says 'The power to concentrate attention upon onesself is a sign of either a diseased body, a diseased mind or of a highly trained mind' so that physiology and anatomy as such might better be dispensed with entirely under the High School and very little need be taught there. Hygiene—the healthful conduct of the individual, and Sanitation— the maintenance of an environment favorable to human health should be the two factors in health teaching. 3. We have used wrong method. Health teaching in the usual academic way is inadequate. The proof of efficiency of health teaching is that those taught develop hygienic habits. There is a deal of difference in possessing knowledge on health subjects and actually putting the knowledge into practice. Such organizations as the Boy Scouts and Camp Fire Girls seem to me to offer great possibilities for establishing habits of health. By adding to our scheme the 'power of organization and the charm of romance, we ought to be able to make pleasurable, therefore permanent, some of these hygienic practices which in themselves are not thought very pleasant by the average boy or girl. 4. Our teachers often lack the proper training and too often lack the personal habits which give force to such teaching. The lack of proper preparation on this subject should and can be supplied even if it has to be given as a special course to teachers already in the schools and the securing of teachers of proper habits to give force to this most important task is a matter of selection.

"Medical Inspection ought to determine and eliminate all physical defects which tend to lower the vitality and lessen the efficiency of the child and produce and maintain hygienic surroundings.

"All four phases of health work mentioned above are now being co-ordinated under Divisions of Educational Hygiene and much better results are being obtained. The producing of good health is the most important problem before us today and merits our greatest efforts. Its economic importance would warrant the expenditure of huge sums of money, many times more than we are now spending. Better health knowledge, better health habits and greater sensitiveness to bad health conditions must come very largely with the children from the public schools. 'NO WEALTH IS EQUAL TO THEE, O HEALTH'."

Physical Training with Special Corrective Work and Hygiene (Including Sex Hygiene) for Girls In High Schools.

Dr. Florence H. Richards.

"Physical training in the high school holds a very important place for many reasons, of which I shall discuss three. I. *Lack of exercise in the adolescent girl.* In the elementary schools, the children run and play at recess time, and both before and after school. They spend much time in playing games of various sorts and get considerable exercise in this way, apart from any special gymnastics they may have in school. On leaving the Grammar Grades and entering the High School, the environment undergoes a change. Everything is done to impress on the girl the fact that her childhood is over and that she is now a young lady. The ways of the High School are different. For instance, there is the morning assembly, the changing of rooms and teachers for each class period; one continuous session instead of two; an indoor recess and lunch, instead of going home in the middle of the day; and there is more personal responsibility as to her conduct.

"As the girl grows, her hair is put up and her skirts are lengthened, in one year alone making a really remarkable change in her appearance. Even the form by which she is addressed is changed, and instead of Mary, she is *Miss* Smith. Because she is a young lady, she is not supposed to run, or jump, or shout, or play on the street, and she very soon ceases to do any of them.

Something ought to and *must* take the place of the free and childish exercise which she has given up; and the gymnasium with its exercises to command, its apparatus work, folk dances, basket ball and hockey games is the next legitimate form of exercise which the girl should have if she is to grow up strong and well.

"II. *The Anaemias of Adolescence.*

There are many ailments attending the period of adolescence, prominent among them being anæmia, or in the growing girl chlorosis. The percentage of cases in all high schools is large. There is not an actual reduction in the number of red blood cells, but there is a reduction in hæmoglobin, the coloring matter, which carries the oxygen, this reduction being due to rapid growth. The treatment of such cases is good, nutrituous food, plenty of sleep, a moderate amount of mental work and *some* exercise.

"Exercise increases the force and frequency of the heart beat, deepens the breathing, thus supplying more oxygen to the impoverished blood, and purifying more blood to be carried all over the body. The increased blood supply to the surface induces perspiration and thus rids the blood of many impurities. It uses up food, and thus creates an appetite for more food. It squeezes the lymph out of the tissues, thus carrying off impurities that become stagnated in the cells.

"It is not so much over-study, as lack of fresh air and exercise that makes boys and girls break down in the high school. If the muscles are not used, they become weak and flabby, impurities collect in the cells, the oxygen inspired fails to keep up the percentage of hæmoglobin in the blood, and anæmia results. In the majority of cases, moderate exercise does good, especially where nervousness is present and that is in most cases, even up to the stage of chorea. A very few cases may be debarred from work where the heart action is poor.

"A regular physical examination of all pupils should be made on entering the school. This should be thorough, including the heart, lungs, eyes and ears, nose, throat and teeth, menstrual functions, nervous condition, general condition and an orthopedic examination for deformities. All defects should be noted, and a card sent home to the parents notifying them that such conditions need immediate correction. The ideal system is one in which such cases are followed up and the parents forced to see that defects *are* remedied. So far, we have only been able to advise, not to insist on correction.

"Every pupil in the school should have such a physical examination once a year and all changes noted. Since we have improved so markedly in Philadelphia in the physical examination of pupils in the elementary schools, there has been a noticable improvement in our freshmen in the High School, especially as to teeth, eyes, and nose and throat conditions.

"III. *Rapid Growth of the Long Bones.*

"The age of puberty is known as the "Awkward Age" and with reason. There is an actual disproportion between the limbs and the trunk. This rapid growth tends to deformity of the spine. The superincumbent weight of the body is too much for the spinal column, and there is a tendency to lean toward one side. Various deformities appear at this time of rapid growth. In school girls, they can be traced to carrying books on one arm on the hip; swinging them in a strap always on one side; the standing position at rest always being on one side; or sitting on one foot, etc. Spinal curvature, or scoliosis, results, with one low shoulder, and a high hip. If the case goes on, a compensatory curve, or a curve in the opposite direction is formed in order to hold the body erect. This disease is entirely functional, there being no disease of the spinal column.

"There is a higher percentage of cases among girls than boys. This is due to the fact that not only do boys naturally take more exercise than girls but greater attention is paid to their physical development. Therefore there is a greater liklihood of early recognition of the deformity and consequently earlier consultation with the orthopedic surgeon.

"Some of the secondary results of scoliosis are pain in the back from nerve pressure; occipital headaches and neuralgias, from stasis of the circulation in the spinal canal; digestive disturbances; palpitation of the heart, capricious appetite; nervousness and various nervous symptoms, even including chorea in young children. Occasionally, a child will enjoy comparatively perfect health.

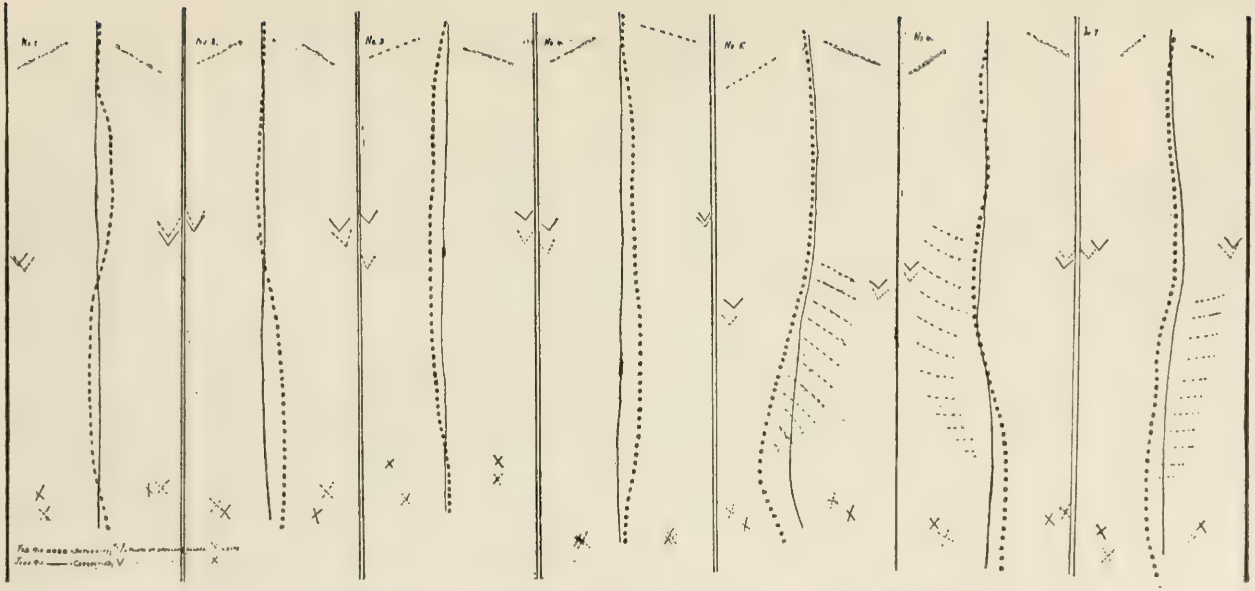
"In the William Penn High School, we have been making an orthopedic examination for over one and a half years. The number of cases examined was 3,186. Those showing some orthopedic deformity were 2019, or 63 1-3 per cent. By orthopedic deformity is meant lateral curvature of the spine, which is shown by a low shoulder or a high hip, or both; round shoulders, or kyphosis; hollow-back, or lordosis; and a forward carriage of the head.

"Each girl is examined separtely, without removing her clothes. She takes an easy standing position, and we take the front, back and side views. Only the worst cases are selected for special work. Their rosters are so arranged that they may take five, four or three hours a week, according to the amount of deformity present; most of the girls take five hours, or one hour daily.

"When a girl is selected for special work, she has a private examination, and removes her clothes above the waist, so that a strip of adhesive plaster six inches wide and two feet long may be adjusted to her bare back. Then a record of the deformity is made on the plaster in blue pencil. The spinous processes are marked, also the different height of the shoulders, both above and at the lower angles of the shoulder blades. The variation in the hips is marked by a cross at the sacro-ilac joint which always indicates any tilting of the pelvis. The plaster is then quickly removed, numbered, and placed on a page in a large record book, made especially for this purpose. It remains in the book until the end of the term, when it is removed, placed again on the girl's back and a record made again in red pencil, showing the amount of correction. (See illustration.) (For purposes of illustration, the deformity is shown in dotted lines, the correction in solid lines.)

"The results of our work have been extremely encouraging, probably because we get the girls for an hour every day in the school week, and they are encouraged to continue the work at home. Every girl has her own special exercises, which she writes on a card and consults from time to time. As the classes are small, eight to twelve in a class, each girl receives individual attention from the teacher. The work is given by the regular gymnasium teachers under my own supervision.

"In the one and a half years, we have had 110 pupils taking special work. Of these, all but about a dozen have been cured. Of those not cured, some were fixed types which cannot be corrected, while others were absent and did not get the work regularly. In two cases, the pupils failed because they would not do the work—they were lazy.



RECORDS OF LATERAL CURVATURE OF THE SPINE.

(THE DOTTED LINES SHOW THE AMOUNT OF DEFORMITY; THE STRAIGHT LINES, THE CORRECTION AFTER SPECIAL EXERCISES.)

"On going over the school records of these 110 specials, we found their general attendance was good; rather a large percentage left school without finishing. Their intellectual standing was significant, and is as follows: Good, 18; Fair, 33; Poor, 59. Whether their poor showing is due to the deformity or not is an interesting question. It is quite probably due to the secondary results of the deformity, but more statistics will have to be collected before a decision is made.

"The money value of this treatment which is given freely to the public is a considerable one. A girl taking five hours weekly gets at least $200 worth of expert treatment. For a class of forty, this makes a total of $8000 in one term or $16000 a year. This does not include the specialist's fees for two examinations for each girl, which would add from $1000 to $2000 to the yearly amount.

"The reasons for the necessity of teaching Hygiene are clearly set forth by Mr. William D. Lewis, Principal of the William Penn High School in the following statement: 'The last few years have witnessed a remarkable revolution against the old idea that it was the chief function of the school to impart a knowledge of many things. The newer conception of education emphasizes the necessity of developing habits that will bring out the best possibilities of the individual, both physically and mentally. With this idea has come an intense interest in the physical welfare of the individual. So the old textbooks, with their exhaustive discussions of anatomy and physiology are disappearing, and their place is being taken by manuals that give the young the instruction most needed to enable them to build up normal, healthy lives.'

"Heretofore, too much Physiology and not enough Hygiene, has been taught in our schools. Rather than have pupils acquire a mass of knowledge concerning the circulation of the blood, the coats of the stomach, the construction of the eye-ball, or the arrangement of the various parts of the brain, is not more practical for them to know why milk is such a splendid food, what shoes are hygienic, and why; how to act in such emergencies as fainting, nosebleed, and drowning; the germ theory of disease, and the intelligent use of disinfectants?

"Because of this strong conviction, a series of talks was planned for my first year class, which talks have since been embodied in a text-book, called Hygiene for Girls. Under Personal Hygiene, are discussed such subjects as the value of exercise, proper positions in sitting and standing, baths and bathing, care of the hair and nails, suitable clothing, tight corsets, hygienic shoes, the values of various foods, the making of menus showing proper combinations, danger of fried food, ventilation and the value of fresh air, the dangers of dust, colds and their prevention, headaches, care of the eyes and ears, nervousness, fatigue, good and bad habits, etc.

"Under Community Hygiene, they learn in a simple way something about germs and their relation to disease; diseases carried by insects; tuberculosis; vaccination and antitoxines; narcotics and alcohol (viewed from the sociological standpoint), patent medicines, public work and emergencies. One chapter in the book discusses in a simple way the reproductive organs, with special hygiene of the body during menstruation. This lesson may be taught by the teacher, or she may leave the girls to read it themselves at home.

"Personal and Community Hygiene need not necessarily be taught by a physician. They may be taught in the Departments of Biology or Physical Training. It is best to give them in the first year in order to reach as many girls as possible.

"The subject of Sex Hygiene, or better Eugenics, should be presented by the woman physician in the senior year. My first experience was four years ago when I gave three talks to the graduating class on Puberty, Reproduction, and the Social Evil. After the lectures, the girls were asked to write an honest opinion of them, and to state whether they thought these talks were of value, and if they would advise the continuation of them in the next succeeding classes. In order to get an unbiassed opinion, the girls were asked to leave the papers unsigned. Of the 145 girls in this first class, not one spoke against the lectures, and all thought they should be continued and elaborated.

"Since that time, the course has been expanded so that it now includes a whole year or forty weeks. The first term is devoted to Domestic Sanitation and we discuss such questions as the Home, its origin, foundation and influences, the water and food supply; heating, lighting and furnishings; ventilation; plumbing; garbage, ashes, and sewage, and their disposal; their relation to insects and disease; germs, their classification; disinfection; recognition of the common diseases of childhood; Boards of Health, quarantine, etc.

"This brings us to the second term in which is taught Eugenics. The first lessons are hints on home nursing, such as preparation of a sick-room, various kinds of diets, information about hot water bags, ice bags, taking a temperature, giving medicines, etc. These lessons prepare the way gently for a talk on puberty in the girl and boy; the reproductive organs; reproduction, considered biologically from the lower animal and plant forms up to the human being; the care of the pregnant mother; the baby, with use of a model—its clothes, with their prices, how to hold, wash and dress it; the feeding and artificial foods, the sick baby, with a little of the common ailments of babies; venereal diseases, with their effects on the wife and children; prostitution, a little of its history, the white slave traffic, why girls enter this life and how they are often trapped into it; feeble-mindedness, and immoral tendencies in dress, dancing, literature, the theatre, art, etc., with special reference to their behavior in offices, street cars, on the street, etc.

"The old idea that equipment for efficiency was to keep the girl in absolute ignorance is giving way to the sane idea of preparing a girl to be a home-maker, a good wife and a good mother. Such knowledge does not come by instinct, but by careful training. So important is this course deemed by our Principal, that all girls, in all of the four courses in the school, are compelled to take this entire year's work in Domestic Sanitation and Eugenics. The girls are quite enthusiastic over the work, and I have yet to receive one objection from a parent. On the other hand, I have received many encouraging words from parents and other relatives, and I hope to continue and broaden the courses each year."

President James of the University of Illinois was present and at the conclusion of the above addresses spoke briefly on the general theme of the importance of the modern high school. President James is of the opinion that the high school should do for the local community in which it is situated, many things now required of the University, thereby leaving for the University the larger problems for solution. The local high school chemist should be able to test the drinking water for his community, point out its chemical composition. All questions of this sort ought to be answered by local high school men and not by the University. The high school of the future will be equipped to do these things.

Adjourned.

Saturday Morning Session.

The last meeting of the session of the conference was held in Morrow Hall at 9:00 o'clock Saturday morning, November 22. Dr. L. D. Coffman of the University presided at this meeting. The first part of the program was given over to general business affairs. At this time Dr. W. C. Bagley explained some of the things the University is doing in the department of education to assist the high schools of the state. He called attention to the splendid library facilities now offered for advanced study and research, the organization of an educational museum, new courses offered, an appropriation for a new model high school building, extension lectures and the like. At the conclusion of Dr. Bagley's remarks, Superintendent Elwood, of Charleston, moved that a commission of six be appointed by the General Conference Committee to confer with the Members of the School of Education concerning the needs of the High Schools of Illinois and to co-operate with the School of Education in collecting material for the museum, plans for the new model school and the like. The motion carried.

The program as announced was then carried out as follows:

The first item was a report of the Committee on Program of Studies and Inter-relationships between Elementary and High Schools. This committee had for its members the following persons: W. C. Bagley, chairman; C. H. Elliott; E. A. Turner; J. G. Moore; H. B. Wilson; C. E. Lawyer; H. E. Brown. Dr. Bagley, as chairman, made the following report:

Purpose of the Committee. The precise functions of the Committee on Program of Studies have never been clearly defined. Its appointment grew out of the belief that in the organization of our Conference with its various sections each working upon its own problems and proposing constructive measures for the solution of these problems, a central committee would be essential to correlate the work thus accomplished in the sections. Just as the high school is more than an aggregation of departments of teaching, so our Conference must be more than an aggregate of sections, and the work of our Conference in constructing syllabi of special curricula should be unified and harmonized with reference to the purpose of the high school as a whole. It was some such conviction as this which led to the initial appointment of this Committee.

In the absence of a definitely stated function, the Committee has been somewhat uncertain where to begin its work. It has felt that it is still too early in the reorganization of secondary education to attempt a thoroughgoing correlation or integration of departmental courses on the basis of fundamental principles. So far as the Committee knows, these principles have never been adequately formulated. And even if they were at our command, it would perhaps be inopportune to apply them. Time and opportunity must be given to the teachers of special subjects and groups of subjects to work out their own problems somewhat independently, or at least without the restrictions which might be implied in premature efforts at correlation. Allowance must also be made for the needs of individual pupils and individual communities. The notion of the "balanced ration" which curriculum makers have borrowed from the science of animal nutrition may suggest some helpful analogies between physical growth and mental growth, but there its educational usefulness apparently ceases. In any case the development of secondary education is just now proceeding upon another basis. This development is characterized by a lititude and a freedom that offer every possible opportunity for adjustment to widely varying needs; it is not being governed by recognized (or at least recognizable) principles of educational values. Arbitrary rules have, it is true, been adopted to meet administrative necessities; these are represented most conspiculously by the college-entrance standards and by the regulations rstricting elections and prescribing for all certain types of work. Behind these rules there are undoubtedly some deep convictions and some intense beliefs regarding educational values, but that these convictions and beliefs are still very far from recognized principles is obvious to all.

This Committee, then, while it would not presume under the present limitations of our knowledge, to formulate the principles of educational values upon which thoroughgoing curriculum-making must be based, and which must form the criteria for criticizing any single course of study is neveretheless of the opinion that such principles will some day be formulated; and it believes that this Conference, working through its different sectional meetings, could, if it so desired, contribute something of value to this end.

The Committee wishes to make two recommendations both of which have been suggested by a study of the syllabi which the sections of the Conference have already prepared. We have now in printed form syllabi, in geometry, algebra, physics, chemistry, household science, zoology, civics, European history, manual training and music. Some of these syllabi attempt in various ways to indicate the relative values, not of the subject as a whole as compared with other subjects, but of phases or topics within the subject compared with on another. In other words some of the syllabi indicate the relative *degree of emphasis that should be accorded to the different topics in teaching.* The "Syllabus on European History," for example, has, at the close of each main topic a brief section devoted to "Remarks," and here very frequently we find suggestions to the teacher as to the relative importance of the various events mentioned in the outline. In the geometry syllabus, the less significant propositions are marked by asterisks, and the teacher is advised that these may be taught informally.

In the physics syllabus, the same device is employed to indicate the important topics. The chemistry syllabus makes some use of different fonts of type to indicate the relative emphasis that should be given to the different topics. On the other hand, in some of the syllabi, no attempt has been made to distinguish between the fundamental and the accessory. All of the topics stand apparently on the same level.

The First Proposal. It is the first suggestion of the Committee that this problem of distinguishing between the fundamental and accessory elements in our courses be attacked systematically and definitely by the sectional meetings.

The Committee makes this proposal in part because if this problem is attacked vigorously and pursued relentlessly, the principles that determine educational values will inevitably emerge from the background of unformulated conviction or feeling into the clear light of day where they can be formulated, criticized, and agreed to or abandoned as the case may be. But even if this end should not be attained, the process of determining fundamentals will be well worth while, for its results will be of great value to the young and inexperienced teacher. The beginner is almost certain to attempt either to cover too much territory, or to spoil his course through a misplacement of emphasis. Our syllabi are constructed, we take it, primarily for the young and inexperienced teacher. If they can be helpful anywhere, then, it is precisely at this point of relative emphasis. A treatment which will bring to bear upon this problem the accumulated experience of successful teachers, sifted and refined through discussion and conference, is infinitely more valuable than individual opinion.

The capacity of our pupils to forget what they have learned is a phenomenon that is familiar to us all. And while one reason for this loss lies in the fact that they frequently have little or no occasion to apply many of the facts and principles that we teach, some part of this loss is due to inadequate emphasis in the process of teaching. If we could prepare our pupils for a life every situation and condition of which we could accurately foresee, we might limit our teaching to those facts that would be certain of frequent application. But we cannot do this, and so our task is rendered much more difficult. We must teach many things in such a way that they will be retained even if they are not used very often. The time may come when they are needed and needed badly, and then like faithful servants they should be on call. If a liberal education means anything it means providing for just these contingencies. And if we can determine what the fundamentals are—what factors are significant and comprehensive and basic—these factors can be given certain advantages which will tend to make them in any case permanent parts of our pupils' mental equipment. We can, for instance, give them the advantage of strong initial presentation, making them stand out sharp and clear, making them subjects of what someone has aptly termed "red letter" lessons. We can also give them the advantage of ever-recurring review,—and the value of the brief, animated, recurring review in permanently fixing the materials of knowledge is out of all proportion to the time and energy that it consumes. It is even possible that, in connection with some of these fundamental things, we may be brave enough to require some old-fashioned learning by heart,—an educational device the abuse of which in the past should not blind us to the sterling virtues that it may be made to represent under intelligent handling. Certainly if the fundamental things are once agreed upon, we may make this requirement with a much better grace and much more confidence in its justice than we could do otherwise.

So long as the elements of a course stand upon the same level, the impression that is made by any one element will be inconsequential. So long as the young teacher has no guide except his own judgment as to where the emphasis shall fall, his work will suffer from misplacements of emphasis. This suggestion of the Committee is a plea for a "pooling" of successful experience with reference to this problem.

The Second Proposal. The second suggestion of the Committee also has the needs of the beginning teacher primarily in mind, and again it may be well to point out that the syllabi are particularly valuable to this beginner. In a few of the syllabi, we find excellent suggestions for the presentation of the various topics. In one instance, six pages are given over to a clarifying statement of the special pedagogy of the subject with definite and helpful advice as to actual class practice. In the opinion of the Committee, this problem could with profit be attacked more definitely and more systematically,—not at all with the intention of laying down a rigid methodology, but rather with the purpose of collecting and making available to the beginner the best results of the experience of his colleagues and his predecessors. At each of our meetings a number of valuable suggestions for teaching are made in the papers that are presented. The same is true of other meetings. Some of these suggestions are published in the volumes of proceedings, and others find a place in current educational literature. But, in both cases, their value is lessened because they are detached from one another and enmeshed in a mass of material from which few have the time and the interest to untangle them. In the opinion of the Committee, something might be done in the various sections to make these definite, concrete, practical, and helpful suggestions permanently available. A committee might perhaps be appointed to collect the best of them and classify them. If desirable, they could be criticized and sifted in open meeting. In any case, the significant contributions could be made a part of the published syllabus, extending and amplifying the excellent suggestions that now appear in many of the syllabi. To be sure there are some who will oppose this recommendation on the ground that the resourceful teacher will work these details out for himself. But the resourceful teacher will not need to forego this privilege; or, if he does avail himself of the suggestions offered he can still find abundant room to exercise his talent. To make available for those who come after us those results of our own experience that are valuable might conceivably be looked upon as a duty.

As supplemental to this report Dr. C. H. Johnston presented a plea for "A Refinement of Terminology Needed in the Literature of Secondary Education." His presentation follows:

We are just now in an era of development in high school education which is making necessary, if we are to keep our issues straight, thoroughgoing revision of our terminology. There are now in demand what we may call different sorts of thinking, and different professional attitudes, all of which on occasion the student of secondary education must assume and distinguish from the other sorts. Until recently high school workers have as a rule thought, spoken, and written in what we may call "subject-matter terms." They have been primarily concerned with understanding the instructional material of their courses. It now becomes necessary for them also to think in terms which shall reflect their methods of transmitting subject matter. Each newly admitted subject into the high school program of studies has ushered in with it its own peculiar technique—its pedagogy. This very fact that agriculture, manual training, domestic science, freehand drawing, trade courses have each forced upon the school a new technique, new class instruction methods, and a broader conception of the field of method itself, has in turn so reacted on those who were before satisfied with traditional school routine that we now hear equally as much of new method in Latin, or History, or English, or Mathematics as of novel pedagogy in vocational or fine arts courses. This era of general educational thinking in terms of special pedagogies of different subject matters in itself makes necessary a modification and restriction of our loose terminology.

In addition to this type of thinking we have a more fundamental type for the first time becoming at all general. We may characterize this additional sign of progress in educational development as "curriculum thinking." By this we mean that those who shape the policies of modern high schools with reference to the administration of differentiated curriculums are doing so with quite other motives than those heretofore in force. Small high schools can probably administer but one general curriculum. They can however so skilfully administer this one by advisory systems and by well-planned "educational guidance" that there may be sufficient flexibility to meet in a measure the different legitimate social or life purposes of their students. The larger high schools will more and more administer differentiated curriculums, the courses going to make up each being schematically arranged for the four years (or more or fewer) not as before solely with reference to logical correlations of subjects, but rather with relation to legitimate social purposes for which the high school may reasonably hope to prepare its different natural groups of students. Very likely most large high schools offering now ten or more curriculums (called loosely "courses of Study" and not having very significant differences) will reduce these to three or four or five real curriculums. These will have genuine differences and will be planned for clearly conceived purposes. Each of the curriculums will in turn be administered for a group of high school boys and girls segregated on some justifiable basis chiefly connected with their likelihood of one or another life career. The curriculums now fairly distinguishable are the college preparatory (called by a dozen different names) the commercial, the vocational (one for boys, one for girls) and the normal training. It is evident that close curriculum thinking is the order of the day in the field of secondary education. It is equally evident that we haven't the language tools, the adequate commonly accepted meanings for commonly used terms, to make our discussions clear. The demand for better "curriculum thinking" is in itself sufficient to call for a revision of present terminology.

The following terms, most of them required in any fundamental discussion of high school problems, have two or three distinct connections, depending upon the person using them, or upon the audience or readers which he addresses: Program of studies, program of classes, or schedule of classes, "general course" (where only one curriculum is possible), curriculum, course of study, high school major and minor, credit unit, and those divisions of the subject matter of courses of study which the committee calls "fundamentals" as distinguished from "accessories," and which others have called units of instruction, units of study, or subject matter units. Other terms whose connection in our ordinary usage is vague or overlaps still other terms are high school departmentalism, school administration, school management, school supervision, and school organization. Now also, since reorganization of the grades into various different divisions, we are practically forced to remark at least rough definitions for such terms as elementary school, intermediate school, prevocational education, high school and secondary education. It might be well to consider further whether we shall establish some consistent distinctions between scholar, student, pupil, or between grade and mark, or whether we shall distinguish the classes in our high school as simply 9th, 10th, 11th and 12th grade pupils (or students or scholars) or 1st, 2nd, 3rd and 4th year high school, or follow college nomenclature with freshman, sophomore, junior and senior distinguishing terms.

The very fact that every discussion of the meaning of the above terms reveals different usages, emphasizes different fundamental points of view with reference to the principles of secondary education, and illustrates the difficulties and obstacles to any common language for the issues involved, is the strongest sort of an argument for a movement toward agreement. The adoption by this High School Conference of some policy for a consistent usage of the most common terms, such as cited above, and the consistent editing of all conference proceedings in accordance with such policy would be a forward step and might influence other educational associations. Indeed one of the purposes of such a step might well be to make proposals to other such groups of educators. The Committee on College Entrance Examinations of the National Educational Association some years ago made a commendable beginning by defining "program of studies," "curriculum," and "course of study."

The National Society for the Promotion of Industrial Education saw quickly the strategic thing to do in furthering their cause, *made a terminology* (which can still be improved upon) ; and found it much easier than to imbed their principles and issues in legislation in several states. Without such tools for classification of issues and educational principles, no clinching steps are possible in our deliberations and conferences on secondary education. In the writer's opinion, for example, the confusing identification of this usage of "school" and "department," in the recent critical legislation in Indiana relating to vocational education, prejudices, doubtless undesignedly, some very fundamental issues in modern educational developments.

The Committee on the Reorganization of Secondary Education of the National Education Association proposes now to consider this matter further. It seems that this is a good time for the High School Conference to make a similar beginning and to hear next year some definite proposals with reference to the establishing of a consistent usage of the common terms required in the discussions of the problems peculiar to high school education.

PART II.

SECTION MEETINGS.

ADMINISTRATIVE SECTION.

C. P. Briggs in the chair. A motion to reduce the committee from five to three members was carried. The members drew lots to see who remained on. C. P. Briggs and M. L. Test were dropped. On motion the chairman appointed Principal W. L. Goble, Superintendents E. C. Fisher and E. W. Powers as a committee on nomination.

Dr. C. H. Johnston of the University gave an address on "The Improvement of High School Teachers in Service." It was substantially as follows:

"We make the following natural subdivisions of our large general topic of improvement of teachers in service.

1. A reasonable schedule of professional reading for high school teachers.
2. High School faculty meetings which count professionally.
3. Constructive supervision. (A problem primarily of the average teaching in the high school, assuming that every one knows pretty well how to detect very bad or very good teaching, and that the class supervisor in high schools must work professionally and cooperatively with those teachers who both can and must improve their technique, their fundamental methods and their organization of subject matter, as well as their professional esprit de corps.)
4. The policies of departmentalism and the assignment of groups of subjects to high school teachers. (The correlation between the actual academic and professional training of teachers and the subjects which they are teaching, and views and policies in operation indicating how departmentalism in the high school administration of teachers and material of instruction differs from or is like, that of the elementary school or of the college.)
5. Promotion of high school teachers and means of measuring merit. Factors (which might be arranged in order of their importance and marked by a percentage indication of value), which govern scales for promotion of high school teachers. And, if one should hazard a judgment, the ideal arrangement of these factors, if he could remove existing obstacles to the adoption of an ideal scheme.
6. Legitimate scientific investigations which may be undertaken by high school teachers.
7. The civic and social equipment of the modern high school teacher. (Desirable and undesirable participation in the political and social life of the community.)

8. The common mistakes of new teachers and the amount and kind of classroom supervision required here.

9. Certain miscellaneous suggestions for the improvement of teachers in service.

   a. Policy of requiring attendance at summer schools.
   b. Policy of having teachers attend some one or more educational meetings in the State.
   c. The 'Visiting Day' for high school teachers.
   d. Provisions for year or part-year leave of absence.

"*First. What is a reasonable schedule of professional reading for high school teachers?* A prominent state superintendent not long ago, wishing to stimulate and also test the reading habits of high school teachers, sent out a brief letter to five hundred high school teachers, offering to send any one who replied and promised to return the volume (with seven one-cent stamps), a notable book just published on secondary education. He received in all eight favorable replies. High school teachers do not read. They are not as a class professionally minded. Their work is not their religion, though in some cases their subject-matter may be.

"What large organization may be found, and what local devices and policies adopted whereby we may get reflected in our high school education the essential and peculiar influences and vitality which can come only from those choice teachers who have the reading habit, the contact with worthy conceptions, the stamina to master extended and serious monograph and book treatments of their own problems? We have not for high school teacher groups the adequate administrative machinery for accomplishing this high aim; and our problem we must insist, is in large measure this one of administration, of organization. We need high school reading circles as such. Here, as in other professional matters, these high school teachers have been overlooked, and our efforts organized too exclusively for the elementary school teachers.

"The history of reading circles in many of the states is most interesting, and they have gone up, become very properous, and gone down in the same State, dependent entirely upon the attitude of the State Department of Education and its friends and upon the leaders in sectional teacher's associations. Reading Circles of high school teachers have never amounted to much yet. It seems, however, that, while the numbers are small in proportion to the elementary school teachers, the kind and quality is such that a very considerable majority of them ought to be enrolled in a good reading circle planned on sane lines and with a definite program. They would welcome such an organization. Publishers cannot accomplish this. Superintendents, high school principals and teachers can accomplish it; but in order to do so they have necessarily to enlist the active, energetic and sympathetic support of the State Superintendent, city and county superintendents and others in authority. And not only that, but somebody with a keen head for organization must formulate a plan for creating a statewide organization properly manned by an efficient board of directors. It will not do to acquiesce in the present tacit assumption that it will do to leave a high school reading circle in the hands of the same people who are selecting teachers' reading circle books for elementary schools. Such teaching circle boards are in a war all the time between one publisher and another over what books they shall select. By the time they get through choosing the elementary school teachers' books, they have lost all of their enthusiasm and they are very loath to concern themselves much with high school books.

"The reading circles are greatly stimulated in the State of Virginia by the State Board requirement regarding professional reading for teachers. There are no life certificates and the condition for renewal of all certificates is the satisfactory completion of *reading courses which are differentiated for elementary and high school teachers.* There is a movement in Wisconsin now to reorganize the reading circles which at present are administered with the county as the unit and only for rural school teachers. West Virginia has six thousand teachers read certain prescribed books and the lists *discriminate between books for elementary and for high school teachers.* The different state examinations for certificates are based largely upon these different book lists. Something similar exists in a few other states and there is a tendency to take more seriously the quality of the books and the fitness for the particular group of teachers for whom they are chosen.

"In addition to this larger and important state unit of organization planned for the advancement of the professional work of teachers in service, there must be smaller and more compact and segregated local units for particular sorts of work, and city units for a still more technical, local, and at the same time more extended reading-and-study courses.

"An interesting effort along this line is the establishment at Rochester in the Municipal Building, for the use of supervisors, principals and teachers of a *professional library and reading room.* Books on psychology, history of education, educational administration, secondary education, etc., and current educational bulletins and magazines are supplied. There is offered here also systematic advice as to definite and complete courses of professional (not recreational) reading. The library has now some fifteen hundred volumes, and was opened for use this last September. Each year a carefully chosen committee of teachers will suggest the best professional books on education which are to be added to the library. In this way all the teachers, supervisors and principals will have tempting opportunities and tactful direction for keeping in touch with the best professional educational thought and the most reliable educational investigations. There can be no doubt but that the city is making here an investment in affording these intellectual conditions and this dignified professional environment, at least equally as important as the physical—all of which, in improved teacher spirit and service, will be returned many-fold.

"Kansas City, Kansas, has in the room adjoining the principal's office an alcove of books which books are bought by the principal and the teachers in turn, analyzed in high school teachers' meeting, and donated to this teachers' library. These high school teachers' meetings consider program routine, but also matters of broader policy and method. Each book has for all the teachers an invaluable constellation of associations about it from this intensive treatment given it. The library, though small, means something in terms of professional ideals and critical intellectual mastery. The selections here represent the best books and monographs there are on secondary education, and there is nothing which has not been used. It takes time and faith in the results of intellectual integrity to persevere to the finish in carrying through any sort of reasonable schedule of professional reading for high school teachers. It can be done, however, and something very fundamental to the best school work is sacrificed if it is neglected. A reasonable amount of reading for any high school teacher is a good book on her major subject and a good one on High School education.

"*Second. High School faculty meetings which count professionally are rare.* Many high school principals who are fine business managers, and can manipulate a variety of card catalogues, and even devise and clerically keep up with complex systems of itemized records, have still found it impossible to make a high school teachers' meeting *go*. Some with such a discovery have decided that faculty meetings of high school teachers should be very infrequent and, when called, concerned with some unusual thing. Others have decided that the meetings should be called and dismissed with dispatch, that nothing should drag as is so often now the case. These latter, as do the former, seem to feel that the meetings can't be made interesting and can't be important except as a sort of clearing house event for announcements, temporary shifts in daily programs or attention to some unusual occurrence which requires abrupt modification of routine—in short must deal only with mechanical adjustments. But there is a class of high school principals who do seize upon the high school faculty organization as *an organized body that exists partly to develop a corporate professional spirit.* Such a principal utilizes the faculty deliberations and its contributions and judgments as a body on all matters involving broadly the general educational policies of the high school. Such issues for example as the present very critical schemes for different modes of articulation with lower and higher grades of education, 'scientific management,' legal status, and other broad questions of institutional relationships generally furnish occasions for serious and prolonged faculty meetings.

"In addition to such big questions, which should be discussed cooperatively in a body of one's teachers, come still more urgently those near problems of administering curriculums, or as we call wrongly them, 'courses of study.' Here the average high school teacher is left in a maze. She has been deprived of this chance for progress in curiculum thinking. Here, moreover, she also has contributions to offer.

"Again such meetings will sometimes have as a body to spend systematically hours in deliberation upon the fascinating, but in many ways perilous, extensions of the high school into new fields of economic, practical, moral, recreational and other types of so-called 'social service.' For the cause of training teachers in service, high school teachers in faculty meetings, and probably in smaller groups carefully determined, must all be allowed to appreciate policies in operation, plans to be projected, and methods to be employed by the administration. They must also have the stimulus that comes from feeling that they can contribute at least to the temporary solutions of these questions. Even matters of the different sorts of pedagogical technique for the different subjects and the economic devices for classroom management, professional interchange of practice, convictions and conceptions of distinguishable educational values, would be clarified and often modified by this professional interchange of points of view,—and are well in order in the right sort of high school faculty meeting. There are routine matters to be considered by the faculty of course, but there should be large things *also* always under consideration, with capable committees continuously at work upon them. Such real meetings require leadership. Neither the leader, the principal, nor teachers should take attendance and participation as a bore, nor as a matter of course, nor even as a duty. They should be privileges. The proper conception on the part of the principal of the best problems and method of attack, with a modicum of tact and professional enthusiasm, can make high school faculty meetings 'count professionally.'

"*Third. The problem of constructive supervision*—what is it? Some high school principals mean by supervision, the clerical and general managerial work of running the physical plant, and the schedule, which, in turn, like a mill-wheel, runs the teaching force. This type of administrator tends to place small stress upon actual observation, analysis, cooperating planning, and continuous, systematic and periodic visitation of classroom teaching, and little also upon the after-conferences from these visits concerning the fundamental educational methods and aims of the teaching in question. With the present administrative policy and the numerous but unescapable clerical and other duties of administrators classroom supervision still occupies a small part of the principal's total school day. The problem here seems to be one primarily of the average teaching in the high school. It may be safely assumed that every principal, unless he is hopeless himself, knows very well how to detect very bad or very good teaching. Real constructive supervision is that kind which provides ways and means of developing the average teacher out of her mediocrity. One of the greatest problems for the immediate future of the high school is that of developing those qualities of classroom supervision and the consequent personal conferences, known as follow-up methods, all of which bring about conditions favorable to the principals working professionally and cooperatively with these average teachers. This large group, if conditions are made right, both can and must improve their technique, their fundamental methods, and the organization into clear instruction units of their subject-matter in the different courses.

"*Fourth. As to departmental policy, the general educational principles underlying the present practice of assigning work and subjects to teachers,* there is no well developed practice. When high school 'departmentalism' is spoken of, the term is used as it applies in college and university administration. 'Units of credit,' 'college entrance requirements,' 'elective' and 'prescribed' courses, 'majors' and 'minors'—are discussed in terms of college departmentalism. The assumption is that high school work must be administered more or less as college work is administered. On the other hand when secondary education is thought of as curriculum work for students, rather than, as above, intellectual work in the interests primarily of logical divisions of subject matter, the tendency is to assume that there is little differentiation of subject matter, that there are only 'inter-correlated,' not 'differentiated-coordinated' courses of study. The curriculum thinking is in terms of the educational principles governing the making of the elementary curriculum. In short *curriculum* and *administrative thinking* about secondary education is done in terms either of the college or of the elementary school—rarely explicitly with reference to the secondary school as peculiar unto itself. With respect to some of these problems our practice parallels our theory. High school principals administer as is done in elementary education; prescribe, promote and graduate ostensibly as colleges do.

"A related problem here is that of assigning subjects to teachers with due reference to their former academic and professional training. This implies that we should more consistently take into account and more systematically utilize the *teaching assets* of these teachers. Many well equipped language teachers are being wasted in science work and vice versa. Assuming there is an approved policy in assigning work to teachers, we may well expect that the high school administration unit which we have vaguely called 'the high school department' may become gradually clear, and be distinguished from that of 'department' in the administration of higher education.

"The only statewide investigation of this problem is the one made in 1912 in Kansas. The following account of this state survey bears upon our immediate problem. The tables following the brief paragraphs on high school departmentalism, correlation of preparation and teaching, and the various combinations of subjects, indicate a situation which when looked at from the point of view of a state at large, becomes a serious one for the future not only of high school teachers but of the state system of high schools.

"The Kansas report and figures of 1636 high school teachers in the state are as follows:

"Another question is the relative proportion of the teachers who may be classified as the departmental teachers, as compared with those whose work is found in more than one department. In the ten cities of the first class where the most favorable conditions for school work are found only 65 per cent of the teachers are departmental teachers. This per cent is very largely increased, too, by the presence in these schools of teachers of domestic science and art, manual training, commercial subjects, music, and physical training. The situation was also studied in the twenty cities in the 'A' file. Here the percentage of departmental teachers was 22.

Correlation and Preparation of Teaching.

"In respect to the correlation between the subjects the teachers were teaching and the subjects they prepared to teach it was found that 79 per cent of the teachers in the ten cities of the first class were actually teaching the subjects they prepared to teach. In the twenty cities in the 'A' file the results were somewhat different, as less than half the teachers had prepared to teach the subjects they were teaching at the present time. The per cent here was 42.

Different Combinations of Subjects.

"These twenty cities were also studied with a view of getting some light on the problem of assignments of subjects to the different teachers in any given school. There seems to be no system or logic in any of the schools in this respect. In most cases it is clearly an arbitrary assignment and shows an utter lack of efficient organization and of a broad and sound policy of administration."

"Departmental work and correlation of teaching and preparation of these High School Teachers in *ten cities of the first class* in the State.
Number Departmental Teachers, 149; per cent of total, 65.
Number not Departmental Teachers, 81; per cent of total, 35.
Number teaching what prepared to teach, 182; per cent of total, 79.
Number teaching subjects they did not prepare for, 48; per cent of total, 21.

Departmental work of these High Schools in the twenty Kansas towns of 'A' File.

	Departmental.	Not Departmental.	Totals.
I.	26	74	100
II.	0	16	16
III.	0	2	2
Totals	26	92	118

Per cent Departmental, 22.
Per cent Not Departmental, 78.

Correlation of subjects taught with the High School teacher's specific preparation for teaching in twenty towns in 'A' file.

	Correlation.	No Correlation.	Totals.
I.	48	52	100
II.	1	15	16
III.	1	1	2
Totals	50	68	118

Per cent of teachers who are teaching what they prepared to teach, 42.
Per cent of teachers who are not teaching what they prepared to teach, 58.

Number of those High School teachers and number of different groupings of subjects in twenty towns of "A" file.

	No. Teachers.	No. Different Groupings.
I.	100	68
II.	16	16
III.	2	2

A list of some of the 'unscientific' or haphazard combinations found in twenty towns of the 'A' file.

I. 1st. Class

1. Chemistry, Physics, Botany, Physiography, Physiology.
2. Mathematics, Physics, Commercial Law, Agriculture.
3. History, Algebra, Agriculture, Chemistry.
4. Agriculture, Physics, Geometry, Psychology, Methods, Supervision.
5. Latin, Commercial Law, Manual Training.
6. Domestic Science, Domestic Art, Normal Training, Physiology, Botany.
7. Algebra, Arithmetic, Geometry, Physics, History.
8. Latin, Domestic Science, Physiology, Arithmetic.
9. Mathematics, Normal Training, Physics, Commercial Course.
10. Business Subjects, English History, Physical Geography, Commercial Geography.

II. 2nd. Class.

1. Physics, General Science, German, English, Geometry.
2. Botany, Latin, German, Geometry.
3. English, Algebra, History, Commercial Arithmetic, Commercial Geography.

Such statewide lack of policy may be the largest contributing cause to the very unfortunate and wasteful but common practice of migration of young teachers from place to place. This situation in Kansas is seen in the table below.

Migration of these High School Teachers.

	1st.	2nd.	3rd.	Acad.	Totals.
1 year	499	132	44	34	709
2 years	222	67	14	21	324
3 years	150	30	3	11	194
4 years	86	15	5	10	116
5 years	56	10	0	4	70
6 years or more	185	12	4	22	223
Totals	1198	266	70	102	1636

"*Fifth. The promotion of high school teachers and means of measuring merit.* No permanent progress may be effected in teachers generally, unless just, systematic and intelligible treatment be assured them in the way of tenure and promotion in rank and salary.

"Once all assumed a teacher was efficient, or a type of education efficient, if no one successfully disproved this common claim of efficiency. Today all are tending to hold judgments in reserve regarding either a school system or an individual teacher until it or she can meet certain definite standards of efficiency. The 'born-not-made' characterization of a good teacher, instead of insuring the impossibility of measuring this perplexing personal factor in teaching, virtually means, on the contrary, that certain recognizable types of personality are among other things, essential in the profession of teaching.

"The first natural step toward determining teaching essentials and listing these in a hierarchy would be to select a group of 'best teachers' as judged by practical standards, and then analyze and define the teaching qualities which stand out for the group. Perhaps the next differentiation of desirable qualities might be the distinguishing of native qualities and of acquired qualities. At present we have more definite standards of qualification for the acquired qualities than for the natives. The next step is to devise a complete scale or graduated schedule, for these groups of qualities. Elliott of the University of Wisconsin has developed such a schedule of the following items with percentage values calculated for each:

Physical efficiency (health, voice, endurance, etc.), 80 points out of 1,000;

Moral or native efficiency (self-control, optimism, sympathy, tact, judgment, etc.), 100 points;

Administrative efficiency, (promptness, economy, co-operation, etc.), 80 points;

Dynamic efficiency (scholarship, professional training, classroom skill, etc.), 160 points.

Projected efficiency (continued professional study, travel, reading, etc.), 50 points.

Achieved efficiency (by tests of achievement), 250 points.

Social efficiency, (cultural, civic, social intra and extra moral work, 80 points.

Directive or supervisory efficiency, 200 points.

"Many school administrators have adopted in a rough way some sort of schematic method of analyzing and evaluating the different factors of successful teaching. Many of these are reported in the late 1912-1913 issues of the Educational Review. After numerous pioneer exploitations such as these have been recorded, and after some scientific collections and interpretations of those varied and measurably successful schemes have been made, it is certain that definite schedules of measuring teachers and of promoting them on such a basis will come about. Vagueness of requirement in school administration always means neglect, whereas requirements which are met are always definite requirements. Such definite so-called scales to measure the fruits of teaching are devised, subject to extensive modifications still, for distinguishable abilities or efficiency, and for progress, in arithmetic, handwriting, spelling and English composition. This is a hopeful indication of the progress of teaching, but one should always keep in mind that onesideness will inevitably result, and doubtless has already resulted, from fixing too exclusively our attention upon relatively exact standards in some portions of the field of the teachers activity to the neglect of the more delicately-to-be-conceived standards for subtler aspects of the work. To overemphasize obedience to standards in academic subject matter and not at the same time to attempt to standardize, or to place relative emphasis upon those factors of judgment, enthusiasm, intellectual honesty, social efficiency, moral and religious wholesomeness, productive imagination, esthetic discrimination and the like, is merely in another way to mechanize routine and to merely deceive oneself into thinking his a scientific sort of teaching.

"A good superintendent recently classified his teachers as follows, largely with reference to the point here under discussion:

'There are about five classes of teachers in their attitude toward criticism; (1) those who are dull and do not seem to realize the force of the criticism, (2) those who understand but are indifferent and do not care, (3) those who begin to weep and wish to hand in their resignations at once, (4) those who flare up and state that they have known all along that the superintendent *had it in* for them and was unwilling to give them a square deal, and (5) those who take the suggestions kindly and immediately set about to improve along the lines criticised.' One can easily judge which class of teachers makes the social administration of the high school possible. It should be added that the supervisor's duty, partly at least, is to increase the last named class by reducing the others,—and not simply give up this kind of supervision altogether.

"*Sixth.* Scientific investigations by high school teachers. Professor George Herbert Palmer, senior philosopher of Harvard, said he voted for the establishment of a graduate school at Harvard, when graduate schools were ventures in America, not for the sake of the graduate student, but for the sake of the undergraduate, not in the interests of research for the professor but in the interests of the research professor's teaching of undergraduates. A person without a problem cannot teach. In this way on general principles doubtless it is safe to advocate investigations by high school teachers. This is becoming common in the graduate work of summer schools, and in the *in absentia* work, notably such as that done by high school teachers under the direction of the Univeristy of Wisconsin. There are many problems which require co-operative solution by groups of teachers, the principal, if he is capable and a master of the method of getting results worth interpretation, leading and directing the work. Such questions as individual differences and some system of recording these on individual cards which would make the records essential to better administration of the school, might well occupy a large portion of the faculty of any number of schools for a year or more, and lead the teachers into exploring fields of educational psychology, of physical and mental tests, of statistical method, of school administration, and of many others. The marking systems or the problems of scales of credit for quality in high school work leads one into equally alluring and limitless fields. Numerous other fields are just as full of problems. The co-operative effort at determining even roughly some reasonable standards of accomplishment for some or any of the courses in the high school, or, the comparative study of two disputed methods of teaching some subject like beginning geometry by sectioning classes on some fair basis would quite likely rejuvenate the whole teaching and speculative spirit of a school. Or, if local problems are not easily conceived, some schools could get in communication with the permanent committee on the Reorganization of Secondary Education of the National Education Association. This important committee has ten active sub-committees of experts projecting a most fascinating program for investigations concerned with problems not in any case foreign to the everyday experience of high school teacher generally. The problems and methods of investigation are given in some detail.

"*Seventh. The civic and social equipment of the modern high school teacher.* Judge Ben Lindsay thinks there is 'a sad need of some practical system of instruction in the principles of justice; not necessarily, nor at all, those advocated by any particular party.' 'I believe,' says he, 'that there should be some more practical instruction in politics, the meaning of politics and the necessity of an interest in politics, in order to bring about social and industrial justice in civic, municipal and national affairs. I believe this could be done (in the schools) without being offensive to any faction or party.' The whole problem is, what is the ligitimate field of activity of high school teachers as public servants? What must be their abilities in the way of enlightment and training of the genuine civic and political insights which must be provided for our high school students before graduation? In addition to the layman's suggestion above and to the school's co-operation with various home and school associations, there should come from school administrators frequently candid counsel and clear admonition to the ranks of high school teachers as to how to become real citizens, to get outside the traditional academic confines, to have views and to stand for important convictions on local, municipal, county, state, social, moral and broadly national issues. Cattell concludes a recent lengthy arraignment of our public schools thus: 'The influence of our half million teachers on the problems of democracy and civilization is entirely insignificant.' This is untrue and unjust, but it is well for all teachers to admit that a personal embodiment of modern citizenship qualities in such a way as to weave them into daily instruction and to inclucate such principles into the school organizations of the student body is a fine teaching asset and will make for progress of teachers in service. The most effective organizations through which parents and teachers may co-operate in inculcating those common civic principles and in forming genuine civic consciences in high school students have not yet perhaps been adopted or even conceived anywhere. It is, however, distinctly and specifically written down in the immediate future program for high school extension.

"*Eighth. The common mistakes of the new teachers and the amount and kind of supervision of class work required.* It is a common saying of school men that raw high school teachers must, under present conditions, do their unsupervised practice teaching on high school students for a year or more somewhere. Some supply this by requiring the practice to be done in the grades; others in some smaller and more helpless high school; still others provide for it, New York, Rochester, St. Paul, for examples, by assigning such persons to the substitute positions and requiring an apprenticeship of a year or two under expert supervising critic teachers, who at other times also demonstrate good teaching to these same apprentices. The survey report of Boise City above quoted suggests that those teachers doing superior work in some subject, and by some method with novel features, conduct at times for younger teachers a demonstration lesson and follow this by discussions of the method employed. The committee think this plan tactfully handled offers one of the best means available for improving teachers in service. The Michigan Association of School Superintendents recently appointed a committee to investigate the situation with reference to this yearly crop of raw high school teachers in that State. The committee's report, the product of a year's investigation, later adopted and printed, in substance said that raw high school teachers persisted for the greater part of their first year in trying out university methods of teaching and organization of subject matter in high schools, and that the state high schools needed, if it could be supplied, a teacher training institution where this crudeness in work might be allowed less harmfully to wear away, and where the chief aim might be to help such people under controlled conditions to anticipate the real teaching conditions of high schools. The general agreement is that inexperienced teachers require the great proportion of co-operative class room supervision, that the work for first year students requires a large amount of supervisory attention and that the first month of the first year for those students is the most critical period. The larger aspects of this topic have been briefly outlined in the discussion above *'Constructive Supervision.'*

"Ninth. Other miscellaneous plans for improvement of teachers in service. There seems to be a general feeling that teachers should be urged to attend summer schools. In most cases this doubtless works well,—doubtless in all except those when such study reduces the necessary physical vitality of the teacher. Some cities lay no stress upon summer school nor any other effort at professional development by teachers. What they lose in service is immeasurable. Others practically require summer school attendance without any tangible reimbursement. This is a hardship on teachers. Others in increasing numbers promote teachers largely on basis of credits in professional study of education or in their particular academic branches. Still other city Boards of Education, with more foresight, as Pittsburg or Rochester again, pay definite sums of money in cash reimbursements for such outlay and such indication of professional integrity of purpose. Several other cities encourage teachers to take leaves of absence for a year for purposes of study, with assurance of re-election, some even with no re-election necessary, but without pay. Boston, Brookline, Cambridge, Newton, Rochester, Schenectady, Trenton, and a few other cities, our most advanced group in this respect, have made provision by which teachers may be granted leaves of absence on half pay for study and travel. No other means of professional growth can be compared with this one for those who can take advantage of it. The summer school expense allowance, or in other cases, assurance of promotion, the consideration for credits gained in extension or correspondence courses, even the expenses and day off for 'Visiting Day' when this becomes an educational arrangement with systematic supervisory features, and also the attendance without salary reduction at sectional teachers meetings —all indicate hopeful signs of appreciation of the necessity of continual and carefully planned means for securing the improvement of teachers in service. There is no danger of going backward on any of these measures. The forward movement has gone too slowly for reactions. Educational advance in this particular is probably, however, now in an era when there is general recognition, by

laymen as well as by school administrators, to quote a prominent city superintendent, 'that preparation in a professional school for teachers, experience preliminary to permanent appointment, continuous training during service as a permanently appointed teacher, are all so vital to the school system as to prompt, when fully appreciated, the most liberal provisions possible for securing the training desired.'

Discussion of this address followed. Miss Wilson, of Cairo, Illinois, said: High School teachers there have a reading circle, meeting regularly and studying Dr. Johnston's book on High School Education. The library furnishes them books on various phases of education. Every teacher has read at least one book this year.

Dr. Johnston was asked if one book for the year as recommended by him was enough. He answered that he recommended that merely to start discussion.

Mr. Briggs thought something should be done to teach pupils how to study and that this problem required study.

J. Stanley Brown, of Joliet, reported that their faculty meetings were quite successful. They spend $50.00 per month on magazines for the teacher's reading table. Each has one period per day for such reading and each must report on his reading at the faculty meeting. Mr. Brown questioned the wisdom of merely handing a teacher a book with the request to read it, but believed in elasticity as to the course required. Mr. Brown further believed that any faculty meeting not carefully planned would be a failure. At Joliet the teachers report conventions and discuss reports given in. They discuss such topics as length of school day; double periods to other studies as given in laboratory work; function of a "helping teacher" (they employ two) and her connection with the classroom teacher. Mr. Brown also believes that a faculty meeting may be made as profitable as any convention. He thinks it a good plan for several teachers to visit the same work in other places and report independently. Two were sent to Gary and brought back widely differing reports. Each saw from his particular angle. Petty details of work should be eliminated from these meetings and the time given to more important professional work. Reference was again made to the double period for work. Its value is unquestioned in the laboratory and why not just as valuable for algebra and other subjects. At Joliet they are trying it in algebra and find that it pays. The first forty minutes is given to the ordinary recitation; the second to directive study for the morrow and help on points not understood today. Mr. Brown reports a reduction of 50 per cent in failures, and advises handling arithmetic, Latin and German the same way. With this method a teacher handles only three recitations per day.

Mr. Hanna thought the double period scheme worthy a place on the program next year.

Mr. Hieronymus spoke a short time bringing in the Rhode's scholarship and naming "Self Measurement" by Hyde of Bowdoin, as a splendid book for high school teachers to read.

Mr. Goble thought high school teachers needed a better perspective of their work; that they were buried under petty details and routine and that professional work would uncover them. He thought the laboratory method of teaching worth investigation and hoped it would be tried in English and other studies.

Mr. Powers recommended Dr. McMurray's book for reading of high school teachers.

Mr. Armstrong, of Englewood High School, Chicago, spoke on promotion as a measure of merit. He said teachers on entrance to a system were measured on scholarship and experience, usually; then on professional work. He declared that many promotions came through wire pulling, politics, accusations and prejudice. He asked for better methods of discrimination.

Mr. Newlon, of Decatur, spoke on point seven. He said the high school represented a select group of boys and girls who should be social leaders in various lines. That high school teachers should be specifically trained and all social leaders in the community. Their interest should go beyond the high school problems.

J. K. Stableton, of Bloomington, presented the subject, "How to Develop and Maintain the Proper Attitude of a Community toward the School."

"In order that a school may accomplish its best work in any community, it must have a certain recognized standing in things educational. It must be the leader. The moment it ceases to be looked to as the leader, its work is largely done.

"When the people have faith in the schools, they trust the schools, and are willing to give time and money for their continued upbuilding.

"Again, when the people have faith in their schools and trust them, the schools are free to do real constructive school work. Officers and teachers are not annoyed by faultfinders and destructive critics, but have all their powers at their command to apply to the problems of the school. Theirs is a work of service. They are not in servitude.

"How then is this proper attitude to be brought about and how maintained? Who is most largely responsible? First of all is not the superintendent the one greatest factor in bringing this about and in continuing this proper attitude? By him more than by any other one person the spirit and work of the school system must be so developed that it will command the respect and confidence of the people. His own intelligent industry and his own spirit must touch into life the industry and spirit of the officers and teaching force of the school if he in any way arouses the proper attitude on the part of the community.

"Ordinarily I have no fault to find with the attitude of the people toward their schools. In fact, I often think that if parents knew how little we superintendents and teachers really know of what constitutes the best school work, they would not have the faith in their schools that they now have, nor trust us as they do. Notwithstanding all that may be said of communities' dividing on their schools, of the disgraceful parts played by politics, religion, and other social influences, still it must be said that the tendency is for communities to trust their schools and their school officials until there is cause for discontent. And when a change comes in the administration the people and the board usually stand ready to appreciate any indication for the better. I remember well when I was called to a certain town for a conference with the board about taking charge of their schools for the coming year. The president of the board who was a man of rare business ability said to me that they had had a certain man there for several years; that they thought their schools with all their faults were as good as other schools but that they really did not know what kind of schools they ought to have; that the people demanded a change so the board was looking for another man, and felt that a change could do no harm. They had trusted this man to the limit.

"After I was engaged for the work the president of board said, 'I pity you, going into that tough hole.' I replied that I did not think I needed his pity. But I did find it a 'tough hole' and carefully, tactfully as I could, I worked with all my might to bring in a semblance of order, and in a number of cases administered corporal punishment. My first assistant who was an excellent man but wholly inefficient as a school man, said to me one day, 'Mr. Stableton, do you expect always to work so hard and carry things this way?' 'I've been teaching here twenty years and I found out a long time ago it doesn't pay.' 'Then too,' he said, 'I do not know whether the people will stand by you in cleaning things up this way or not, and that boy you punished today is judge so-and-so's step son and he may make you trouble.' I replied that I was willing to go away any day the people wished me to go, but that the school must be decent while I was there. I had been so busy trying to bring in what to me meant only a decent condition that I had had little time to meet many of the people. A few days later near the end of the first month I met the president of the board on the street. He stopped, reached out his hand and said: 'I want to tell you that licking you've been doing up there is doing a derned sight of good.'

"I spent eight years in that community, eight of the happiest and most profitable years of my life, but I had to put my own work (the school) in order before I could expect the people to respect it. The president's words were the first words of encouragement I received. They did me great good.

"If the superintendent studies to know the condition of the schools and the needs and then proceeds vigorously, yet tactfully to improve the condition of the schools, it is not long before the people appreciate what is being done. If he sees great changes that should be made, he should remember that an evolution can bring the desired result where an attempted revolution would only delay the bringing in of the new order.

"I would like to say before going further that I am not attempting to discuss the work in large cities. I am only considering the work in towns and smaller cities. As many of you know I have had no experience in large cities.

"I once heard Sam Jones say that soem people thought it was a successful life that ended well, but he said that was only one part of a successful life, that a successful life was a life well begun, well continued and well ended. So success in winning and maintaining the proper attitude of a community toward its schools means not only a good beginning, but well continued, and for the highest success, well ended.

"It is possible sometimes for a superintendent to go into a new community and by flash-light processes win great applause when his work has nothing to sustain it. To be successful the superintendent must study to know the school, the board of education, and all the forces that make for the betterment of the community, as well as the community at large. He must be able to affiliate the work of the schools with the other social-up-lift forces in such a way as to draw them to the help of the school in its broader than school-room work. But while this should be done there must be such a persistent, intelligent planning and carrying out of the every-day school-room work as will cause teachers and all school officers to realize that whatever is being taught is being taught in a most efficient way. A lack of confidence on the part of a corps of teachers in the efficient school-room-work leadership of the superintendent does more than possibly any other one thing to discredit the school in a community. Woe unto the superintendent who attempts to cultivate and to hold his community in the right attitude toward the schools when the great majority of his teachers report the administration of the class work of the schools as unsatisfactory. It is not so much *what* class work, as the quality. But the administration must make the teaching force feel that whatever the subject, the instruction is to be kept at a high standard. Whatever the quality of the instruction has been in the past, even though very inefficient, a body of teachers can be led to appreciate high quaiity work and to take pride in it. This pride on the part of teachers in the work of the schools soon touches the 'life beat' of the community.

"When a superintendent leads his teachers and his board of education througn the quality of his work, and at the same time puts himself into a sympathetic working relation with the other uplifting forces in the community, he soon finds the attitude of the community toward the schools all that could be desired. It is possible then to raise the ideals of school work of the whole community. This is really the greatest work a school superintendent does for a community.

"But it is one problem to state these things and quite a different problem to do these things or even to indicate the processes of doing these things.

"A superintendent should always be appreciative of the good work that has been done by his predecessor and the teachers working under his direction. Whoever may have been superintendent there is always some good done that can be commended; and no words at all should be spoken of the faults of the preceeding administration. The record of the past is made. It is the new man's part to build the future and he has his hands full if he conserves all his energy for his own work and dissipates none on useless criticism of the past. Then, too, if he is to do his work he must have the loyal support of his teaching body, many of whom, if not all, were loyal supporters of his predecessor and any criticism or reference to the mistakes of the past that he might make would tend to alienate members of his teaching force. Such members, when rightly considered, would be just as loyal to him as they had been to his predecessor.

"Then too, most superintendents are not called to positions where conditions have been bad so that a superintendent should take it for granted in planning for the first term that the teachers have been doing good work. Then as he finds the weak teachers, if there be any, it is his duty to try to strengthen these teachers. The work of weeding out a corps of teachers should not be begun until he has done all that he can do to improve the teaching force. If there are still a number who can not be brought up to the desired standard he must make changes. It is his duty; and by this time it will be evident that he is not prompted to make the changes by any selfish motive, but only for the good of the schools and so he will be heartily supported. By a careful selecting of the teachers who come into the schools he can build up a teaching force in accord with his own ideals, and in all this he will be sustained by an appreciative community.

"Changes in the program of studies and the work of teaching and general management can be brought about in much the same manner as changes in the teaching forces. In fact, they can be made much more easily than changes in the teaching force. After the superintendent is in close touch with his teachers he can depend on them to help in all changes looking to more efficient work and to improvements in the program of studies. Of course, he must lead his teachers to an appreciation of the changes he would make before attempting to make them. In other words it is his part to so inspire and educate his teaching force that they may be alive to the best that is known in school work; that they may be full of the spirit of service. He should not attempt radical changes in the program the first year.

"He must prepare not only the teachers, but his board and his people as well, for advance moves before he attempts them. Sometimes he is freest to carry out his plans if he enlists the active co-operation of forces outside the schools to bring advance moves within the schools. Then there is no serious questioning from without or within to hamper the work when once introduced. This is simply aligning the forces of the community in harmony with the contemplated efforts of the schools; or in other words, is leading the forces of the community to an appreciative understanding of the work of the schools in order that the attitude of the community may sustain all that is done.

"May I explain what I mean by enlisting outside forces? A few years ago when we wished to introduce the subject of Domestic Science into the Bloomington schools—this was before it was at all common in this part of the state—we put the subject before our patrons' clubs in the different school wards, asking their help even to the extent of raising the money to furnish the kitchens. We called upon the Woman's Club to aid by bringing the subject before its members and the people in general in lecture form.

"'And why,' some one asks; 'all this effort?' 'Certainly,' I would say, 'not because Bloomington could not afford the expense.' The fact is we went so far back into the community forces simply to fix the attitude of the community toward the subject so that when once in it would be theirs and theirs the glory of it, and as a result an unquestioned, permanent department of the school work. After the patrons in each of the six grammar school wards had equipped a kitchen, do you suppose they would see harm come to the department for which they had so earnestly labored? It was christened the child of the whole community and not the pet child of the superintendent or Board of Education; and all forces have been one in seeing it grow to its present stature.

"The relation sustained by the superintendent to his board and by the board to their superintendent are most vital. It should never be a strained relation on either side. A united and an undivided pull by the superintendent and his board tell mightily on a community. A superintendent at the beginning of his administration, and all the way along, must be mindful that he is responsible to the board of education for all that he does; and that the board in turn is responsible to the community.

"Some boards are free in granting rights to the superintendent and other boards grant but few. But in either case there should be a clear understanding of the rights and responsibilities that are the superintendent's in order that there may be no cause for a misunderstanding from this source. In a conference with the Bloomington Board of Education just before I was engaged for the position of superintendent, I was asked what I would consider my duties as superintendent.

"I replied that I thought that to shape the instruction, the program of studies, and in short, to have the management of the *school* side as distinguished from what might be called the *business* side of the school system should be my work; and that in this I would include the right of selecting the teachers, subject to the approval of the board. I said further that I would not care for the position if it meant that I should act as secretary of the board; that I felt my time of more value to know the teachers, the scholars, and the teaching.

"The board replied that I had outlined the work they would wish me to do should they give me the position. They emphasized the fact that as they would hold me responsible for the good work of the schools they felt it was my right to select the teachers.

"These things are more definitely stated in the rules regulating the work of a superintendent of our schools, but I have briefly stated the leading points.

"The past few years have seen so much agitation of school work, of its weaknesses and its strong points, of the changes that should be made, and the changes that should not be made; both just and unjust criticisms have been scattered abroad in many widely read papers and magazines, until the people, unless there be careful leadership in the schools, are confused and hence inclined to mistrust their schools in all that they do.

"It is true the present is a time of great changes in school work and in ideals of what the public school should do for the people. It is a time of testing, of blazing the way, of feeling the way into the new fields. It is a wide-awake period of inquiry and investigation where much remains to be tried out before we know just how far we have really come in what is called the New Education. Vocational education is certainly here, but even its most ardent supporters are more or less divided among themselves on many things. Only its great need seems to be a settled fact, while many, many things connected with it are yet to be determined. The wider use of the school buildings is no longer a mere theory; but how this can best be done in each community must be worked out in accordance with the genius of the community or the misfit offends.

"The teaching of sex hygiene in the public schools is in the lime-light of public attention today; but as I listened to the discussion of this subject by some of the world's greatest teachers and experts at the International

School Hygiene Conference in Buffalo, N. Y., last August, I was impressed with the modesty of all the speakers. For while, with but one exception, all were strongly in favor of teaching sex hygiene in the public schools, every speaker was careful to say that he could not tell us *how to do it,* for he did not know. One or two said, "I think I should try to do it in this way but I do not know that you should try to do it as I would."

"These are only a few of the questions relating to the work of the public schools that are in the minds of the people today and that in many places, are causing an unsettled feeling in communities because the school problems have not been sufficiently worked out in our country to win the undivided support of a people free to think school problems but largely held by the school traditions of the past.

"There must be leadership in the schools that can hold what otherwise might be contending parties to a unity of purpose. Much depends on how intelligently the new is presented and brought into the schools while at the same time the best of the old is conserved. There must be community partnership as well as school leadership. The superintendent and his teaching force must, by reading, by study and by inspecting work, know what is being done in these things in other communities and must be able to determine what seems best to try to do in their own community and must be able to so educate the community that there may be a sentiment to support the new work when introduced.

"In my own school work I come into personal touch with a large number of our people through our patrons' clubs. We have a club in every large school in our city. Each of these clubs has a large membership attendance at its meetings. Each year I meet a number of times with each club and talk of the school work to the patrons. It is at these club meetings that I have opportunity to present the subjects of what some call the "new education."

"Last year many of our people became interested in sex education, and the possibility of its being taught in our schools. This led to our calling a meeting of the officers of all the clubs to talk over the subject and consider what steps would seem advisable. I said I thought that before we attempted the work with the children in school there should be a sentiment created in the community. I said further, that our teachers were not prepared to teach the subject and that teachers in general had had but little or no training for the work and that in our community, at the present time, I did not favor calling on our physicians. All agreed the safer plan would be to create a sentiment by beginning with the parents through the clubs. I was expecting to attend the International School Hygiene Conference at Buffalo, N. Y., in August and promised a report to the clubs of the discussion of the Teaching of Sex Hygiene in the Public Schools. At the present time I am making the rounds of the clubs and giving quite a complete report of all that was presented on this subject at the Buffalo meeting. We have been having large numbers to hear the report. This is putting the people in possession of all that the superintendent has gathered on the subject. As a result we have purchased a number of the most highly recommended books on the subject of sex hygiene, to be circulated among those attending the patrons' meetings and among the teachers. We have also arranged to have several lectures before the clubs by high standing physicians and by one or two special students of the subject, during the school year. This work is all for the patrons and the teachers, not for the scholars. It is educating the parents and the teachers. Already a great deal of reading is being done.

"I have never, in my own experience, found a board that was not willing to give all the rights and responsibilities that I would care to have or to assume. In Bloomington I have had for twelve years the right guaranteed me in the beginning to select the teachers, subject to the approval of the board, and never once has my selection been opposed. It is true we have a teachers' committee with whom I may advise and to whom I always present my nominations. This committee and the board as a whole each has the right to pass on my selection.

"I am very careful in selecting teachers always to explain to the committee my reasons for recommending this or that teacher that there may be a full understanding of the fitness of those recommended. If we superintendents are not too insistent on our rights, but show that our only object is the best possible teachers for the sake of the schools our boards are disposed to abide by our judgment and to give us the greatest freedom to build up the best possible corps of teachers. In fact, usually, the members of a board are glad to have some one bear this responsibility of selecting teachers.

"If we assume the responsibility of selecting teachers, the unpleasant duty of inviting teachers who fail to measure up to sever their connection with the schools is also ours.

"It sometimes, yes, probably very often, happens that boards do not, on engaging a superintendent, give him much voice in selecting teachers. I think this is especially true in the case of superintendents who are new in the work, and more often possibly, in the smaller towns. The only thing then is for the superintendent to do his work so well, and by careful, thoughtful service prove to his board his fitness for this part of the work that he may win to himself this right. I think almost all of us who have taught for a number of years have had some experience that bears out what I have said.

"In one town where I taught a number of years in my earlier experience, I said nothing and the board said nothing as to who should select the teachers at the time I was engaged as principal of the town schools. At the close of my first year's work in June there were three or four positions to be filled. At a meeting in June just before my summer vacation all these positions were filled except one. I went to my home in Ohio for my vacation. After the next meeting of the board, the president wrote me that they had employed Mr. so and so to fill the vacancy not filled at the last meeting; and then he added that he feared they had made a mistake.

"As soon as I read the letter I knew an incompetent man had been given a responsible position, but all I could hope to do was to make the best of it and to try if possible to help him to do satisfactory work.

"When I returned to my work in September the members of the board had all come to feel they had made a mistake but it was too late to make a change. The board felt that they had put a handicap on my work and that it was hardly fair to me.

"I said that I'd do all in my power to make his work measure up and hoped that we might be happily disappointed. But we were not. He could not do the work at all and it became necessary to make a change.

"Then the board said for me to select my own teacher for the place, and from that time on as long as I continued in that position I selected every teacher that went into the schools. It depends on the superintendent whether or not his powers are enlarged as his board come to know his work. I think in my case I have always been blessed with unusualy fine boards and so have been free from many of the trials that some times beset the way of a superintendent. I have always had all the power or rights that I would wish, probably more than I have always used wisely, although I like very much to have my own way.

"The greater the power delegated to the superintendent the more carefully he should guard his attitude toward his board and not assume the role of a dictator. If he has taken time to think out his plans and has confidence in them himself, he need have no fear in presenting them to his board for their discussion and finally for approval if in the best judgment of the board it should seem wise. In the discussion of school plans the keen insight of business men is often illuminating.

"It is this working together of the superintendent and his board that makes greatly for the proper attitude of a community toward its schools.

I have spoken of the superintendent's knowing the other organized social forces in his community and so affiliating the work of the school with these that they may lend additional support to the schools. Among these forces,—they vary somewhat in different communities,—are the Associated Charities, Woman's Clubs, Patrons' or Mothers' Clubs, Y. M. C. A.'s, Y. W. C. A.'s, Civic Leagues, Medical Societies, and all other societies for social or civic work, the county authorities who in some places aid in caring for dependent children, boards of health and Dental Societies and any other like organizations should come in this list.

"The Superintendent should not wait for the various organizations or departments to come to him but he should put the school work and especially the work of schooling the dependent and delinquent children before them and ask their co-operation indicating ways in which it may be given.

"He should be the best posted man in his community on what can be done for the dependent and the delinquent children through the county courts if there is no special juvenile court, and he should not be slow to call these courts to his aid.

"With our compulsory attendance law and child-labor law, if the superintendent is in close touch with the county court, and other county officers, and the various charitable organizations, every boy and every girl of compulsory school age can be clothed, and fed if need be, and kept in school; or, if too incorrigible for school, can be placed where they will be well cared for by the state.

"All this organization of the beyond-school forces for care of children at the call of the school superintendent and his assistants impresses the community with the fact that the school is about its business.

"The newspapers also should be fully acquainted with the work of the schools and their representatives given every opportunity to see and know what is being done. There is a difference between 'cheap parading' in the papers and 'giving vital information' through the papers. The one is to be avoided, the other to be made use of.

"But while all the extra school affairs should receive their due consideration, still the real heart of the superintendent's work is the school proper. He should be known and felt throughout every department.

"While it is only in keeping with the position he fills that he be able to speak on educational or other subjects before various gatherings of educators, and it is well if he can find some time to write for publication that through his experience he may help others, still it is vastly more important that he keep his own work so well in hand that there is no uncertain attitude of the community toward its schools.

"The superintendent can not keep in touch with the trend of education without reading and study, nor without attending meetings for the promotion of education. But even in attending educational meetings he must exercise some little common sense in deciding how many meetings and what meetings out of the many provided to attend, or by his much going his time may be so broken that his own schools may suffer. The superintendent if he knows his work can best judge how much time he can afford to give to this part of the work.

"But again the superintendent should know his school. He cannot sit in his office working out lists of statistics or doing this or that for the greater part of his time and be intimately acquainted with the real work of the rooms by depending on reports, and reports, and reports. Time given to visiting the rooms, to knowing the children and to putting himself in touch with the daily work in all the rooms throughout the schools, rightfully holds the community in the proper attitude toward the school work. To me, in my own work, the fact that I can go into any school in the city and feel that I really know the children, and know their work, that I can call hundreds of them by name in any part of the city; and that they know me and that we are friends not only in school, but wherever we meet, makes the work easy and binds the community to our schools.

"One thing more and I close. The superintendent should be gracious with the people when they come to the office whatever their mission, whether to find fault or to praise. He should keep an open door for them. During office hours he should keep a wide open door for all who may come. The superintendent should be approachable and listen to the cause of the humblest with the same courteous manner that he does that of the most distinguished. If the superintendent does these things the attitude of his community will not be far from right toward the schools."

After discussion by Principal C. E. Lawyer the section adjourned until two o'clock.

The afternoon session was given over to the State High School Athletic Association, with Principal F. M. Giles, of DeKalb, presiding.

Mr. DeGroot, of Chicago, was called and spoke without manuscript on "What the Public Recreation Movement suggests in the Treatment of High School and College Problems." The following notes on this address are from the secretary of the section:

He spoke strongly on the placing of responsibility in athletics, and said that most schools and colleges placed it all on the coach rather than on the men, and that every game was a game of the coaches instead of the teams.

Sport has assumed such proportions and become so much a part of us that most people read the sporting page of the paper first. Colleges and universities are fully equipped for this work and the larger cities of the country are equipping as well, and in a similar way. Chicago has spent $500,000 on this movement and other cities are doing proportionately as well. The speaker thought 50 per cent of the school entries reach high school but only 2 per cent college. He said the movement in cities was profoundly important and that it tended to overcome socialism. He deplored the fact that there are no more "tom boys" and said girls must enter into the sports as well as boys, and grow normally through play. Get rid of the slush of fiction and unhealthful thought by exercise. Standardize play; control it. It may take on various forms such as play gardens, manual training, etc., as well as the other. This is athletic social guidance.

The public playground supervisors take a different plan from that of the university or high school. There are no uniforms furnished, no gate fees, no coaches. The basic principle is—responsibility of the individual. Every man on a team is responsible to himself and to the team, and not to any coach, for his personal habits. It is believed that this works better than the other way. Champions were made who competed successfully with university, coach-trained men and who were always to the front in all the great meets. Initiative and manhood result from the individual responsibility system. The training table system of the schools and colleges were likened to feeding stock. Simply come to the trough and eat whatever was fed, whenever given. No responsibility on the individual means no initiative and no growth. The speaker believes that few college men are able to go on a field and direct a game competently. Put the responsibility on the man and the game and not on the coach. College men, on going home, lack independence, and are helpless in many instances.

High school men must conduct their own meets on their own grounds in their own way. Meets at college are for the purpose of proselyting and finding strong men and should be stopped. Good men are everywhere interested in the playground movement. In all games, coaches should be put in the grandstand and kept off the ground. Freshmen should be allowed to compete in all sports with the upper classmen; the seniors to be out, and to keep them busy and interested let them coach the others. This puts the responsibility not on the coach, but the school.

Many college men never correlate their sports with real life until many years later, when they have children of their own to plan for.

Mr. George Huff, of the University, came next. His address was as follows:

"I accepted an invitation to speak on this subject with much hesitation because I have very little first-hand knowledge of high school athletics. In my own high school days organized athletics were unknown and I have never had any official connection with a high school, but I am inclined to believe that the problems you must solve in high school athletics are very similar to those of the universities.

"It is well to remember that nearly all of our athletics have their beginning in the high schools and that a mighty force in our national life can be largely shaped and guided, either for good or for evil, by the high school administrators. It is well to bear in mind that I am speaking of athletics and not of physical training. They are closely related at some points and an exact definition of the difference between the subjects is somewhat difficult. But we may safely say that athletics is some form of physical exercise, which takes the form of a game embodying recreation as well as exercise—a contest between individuals, or more often, a number of individuals working in unison against a like number. Physical training is more concerned with body building, without reference to contests and is generally without the recreation features which make athletics so attractive to the young. The distinction then seems to be that athletics is exercise done for enjoyment and excitement and that physical training is exercise to maintain and promote health and strength.

"At first thought it would seem that the rational step for our schools would be to emphasize and develop the work in physical training proper. I recognize the great value of physical training. We are only just beginning to realize the good that it will accomplish but I do not believe that it would be wise to attempt to supplant athletics with physical training. We must remember that we are dealing with the young and the immature and that their viewpoint, not ours, must largely govern. The young must have some time to do the things they like to do and enjoy doing, so long as no harm results and it is our duty to guide and direct their activities into the right channels. If we enter into their activities whole-heartedly, with a genuine spirit, this guidance and direction will be successful.

"No one realizes more than I do that athletics should be but an incident in high school or university life and all other outside activities may be put in the same category. Music is an admirable study but to neglect one's education for its pursuit would be a grave mistake. So with dramatics—social life—debating—oratory—newspaper work and athletics—all are of value and admirable as a supplement to the real work of the school, unless they are permitted to usurp too large a place. Students who can participate in these outside activities and at the same time maintain a high standard in the class room should be encouraged—they are being rounded out and in many of these activities they are being fitted to make good citizens and leaders in after life.

"It is not long since education in schools, colleges, and universities was considered to embrace only the intellectual side and that the responsibility of the institution ended when proper class-room instruction was given. Of late there has come a realization that to turn out the right kind of boys and girls, there must be instruction in morals and that physical instruction must not be overlooked.

"The ideal situation, of course, would be a contemperaneous, even, intellectual, moral and physical development. If this is impossible, the moral and the intellectual sides should have first consideration, but I hold strongly that through athletics the student can not only be developed physically but also morally and mentally to a large extent when athletics are wisely administered. Athletics improperly administered may be a moral and mental detriment. So the condition resolves itself into a question of government, which I shall take up later.

"The modern system of highly specialized athletics in schools has been of comparatively recent origin. While at the beginning of the era of athletics, the system had generally, I think, the hearty indorsement of teachers and citizens, in recent years there have been grave questionings of its worth and some outspoken opponents have raised their voices.

"This criticism comes at a time when the United States is far in the lead of other nations in athletics. We have the fastest runners, the strongest men with the weights, and the most skillful hurdlers, jumpers, and vaulters. No other country has a game in which the players exhibit the skill, the quickness, and the quick-thinking of our baseball players. Our football players excel in a game which requires brain and brawn, skill and speed, courage, endurance, and stamina. Only our cousins in England and Scotland can compete with the United States in tennis and in the ancient and honorable game of golf, while the Germans are our only rivals in swimming. We lead all the nations of the world in the varieties of our games and sports and in the widespread interest that we take in them.

"Such has been our success that other nations envy Uncle Sam and wonder how he does it. They want to learn the secret. Save for an occasional rebuke from the English that we go into sport, not for sport's sake but to win, criticisms from abroad are few and it is amusing to note that England recently sent a commission to the United States to study American athletic methods and possibly to engage an American trainer. The Germans, Scandinavians, Australians, Japanese and Chinese are among the peoples who have turned to us for guidance. They are introducing American sports and American training methods, holding that their people will be benefitted. Germany has engaged an American trainer at a fabulous salary for five years. Thus while Europe sits at our feet to learn the A B C's of athletics, the system, both in high schools and universities, has its critics. What are the criticisms? Let us sum up some of the graver ones: 1. That the chief end to be gained by competition is to win games, no thought being given as to whether or not the sport is good for the boy.'

"The desire to win, when the game is conducted fairly and fully within the rules is not objectionable. The point to be insisted upon is that the victory must be won with absolute honesty. 'Fighters' in every walk of life are successful—those strongly imbued with the desire to win occupy the seats of the mighty. When he helps to win a game, a boy may be given his first inspiration to do something better than others do it. I am certain that almost all of our games make for physical betterment. There are a few sports—or rather events in some branches of sport—concerning which there may be some honest doubt. For instance: no one will declare that baseball is anything but helpful in every way; a sport such as long distance running may cause different opinions.

"II. 'It is charged that those who need training the most, get the least and that those who need the least receive the most attention.'

"To 'provide raional training evenly for all students rather than elaborately to train a few' would certainly be the happiest solution of the problem. If we could order every student to the gymnasium to take this rational training and each student would obey willingly and gladly, this dream might come true. But physical training work, more than any other kind, to obtain real results, must be done cheerfully, enthusiastically. Ordinary gymnasium work is monotonous. A boy must exercise with a will and zest. He wants fun with his exercise and that is best provided by the playing of some game.

"The obvious step, then, is to provide games enough for all; games for the weak and games for the strong. If physical limitations bar one from football, let him play tennis. If a lack of skill forbids baseball, let him try swimming or skating. There are games suited to all physiques and temperaments. The difficulty, as I have seen it, is not in inducing boys to take part in some game to which they are adapted but to provide adequate facilities. The utmost should be done to develop intramural athletics, to encourage class contests and all kinds of local competition. The regular team, which is 'elaborately trained,' and engages in outside competition, furnishes an important inspiration to the other students by 'popularizing' a branch of sport.

"Intramural competition should be made as equal as possible by arranging different classes for those of different weights and ages. Cook County high schools are carrying out this idea of athletics for all by light weight football and basketball teams. An interesting elaboration of the idea may be found in the current issue of the 'Illinois Magazine,' in which Arthur R. Hall, formerly head coach at Illinois, discusses a method of handicapping football teams by requiring the heavier team to gain more ground. It is undoubtedly sound judgment to promote games which the student may play in after life, although his school and university days are over. The so-called minor sports are best adapted for this purpose—golf, tennis, swimming and handball are among them. The more popular sports; football, baseball, track athletics, and basketball are less desirable from this standpoint, but the memory, for instance, of their baseball days is something that many Americans would hate to be deprived of.

"III. 'It is charged that football, the most popular sport of both high school and university, is too rough and dangerous.'

"Football *is* a rough game. As to safety of life and limb, the changes made in the old rules have gone far to insure that. Expert medical supervision of the candidates for the football team to make certain that no physically unfit boy is permitted to compete and the selection of careful, upright officials for football games will practically eliminate all risk beyond the ordinary hazard we take in any athletic activity. Officials in football games have arbitrary power to prevent unnecessary roughness and they generally know when a player or a team is 'roughing it' intentionally.

"The danger of football is overestimated. Persons are injured but they are injured doing other things. The mother who taboos football for her boy will cheerfully ride in a speeding automobile. In the State of Illinois there are about 350 accidental drownings annually while fatalities from football in the state average less than one a year. Yet swimming and boating are regarded as comparatively safe while football is declared to be exceedingly dangerous.

"No game does as much as football to develop courage and self-restraint, to enforce discipline and to discourage effeminancy.

"IV. 'It is charged that because of time taken for training and practice, class room work suffers.'

"Students can take part in athletics, yet stand well in their studies. It is just a question of administration. Providing that good scholarship is insisted upon as a qualification for membership on an athletic team, the student's school work will not be injured and indeed, in some instances, may be benefited. High school faculties should enforce the scholarship eligibility rule without exception and when boys understand that there will be no chance to play when they are 'down' it will prove a spur to study. Membership on our varsity teams is a guarantee of good scholarship. Men of known athletic ability in the university, who are ineligible because of scholastic deficiencies, are so few that they can be counted on the fingers. The universities have successfully solved this problem and the high schools will find it easy if they stand rigidly by their scholarship rules.

"V. 'It is charged that athletics encourages gambling.'

I do not believe that athletics encourages gambling. I recall that in this very university, before the days of athletics, that there was considerable betting on oratorical and declamation contests. Dr. Peabody, the regent, considered the situation serious enough to call a special meeting to demand that the students reform. It would not have been fair to have said that these forensic contests encouraged gambling and to have demanded their abolition. The truth of the matter is that there is an exaggerated idea of the amount of betting on university contests and I imagine that betting by high school students is practically nil.

"VII. 'It is charged that the salaries paid athletic coaches are excessive and out of proportion to those paid teachers.'

The question of the salary of coaches is simply the law of supply and demand. The coach must make good. That is, he must get the best results out of the material he has and demonstrate his ability when his teams meet other teams. The inevitable result is that the good coach is well paid and the poor coach is soon out of a job. The same sifting process would result if applied to teachers, providing that school-room competition could be established on the same basis as athletic competition, one school against the other in scholarship competition. Soon startling results would be recorded. The results of good teaching and poor teaching would be sharply contrasted. The teacher whose school consistenly ranked high, would demand and receive more salary than the poor teacher. Good coaches should be well paid.

"None of you would declare that the public school system was perfect and I would be the last one to deny that in the system of organized athletics there is not much that could be profitably corrected. That heroes are made out of uncommonly common clay is charged and this may be especially true of high schools. In the university, success in athletics does not necessarily indicate popularity unless the man himself has qualities which count. Other criticisms are of course made, but they deal with abstract questions and I shall not attempt to discuss them in this paper.

"I have already said that the successful solution of the problem of athletics is to be found in administration. Your athletics will be a source of satisfaction or a source of annoyance—just as you govern. The entire management of school athletics cannot safely be left entirely to students. They should have considerable control but sympathetic guidance by principal or teacher is absolutely necessary while active direction by an expert is better. Even in universities where the salaries are generally ample, it is extremely difficult to get the right men to supervise athletics and to coach teams and it must be doubly hard to secure satisfactory men for high schools at the salaries which can be offered. In too many high schools the supervision of athletics must devolve on some teacher who already has more work than can be done well. Yet as so much depends upon the character and ability of the supervisor of athletics, whether his whole time or part of his time is devoted to physical training and athletics or whether he crowds the duties upon an already over-crowded day, he should be chosen only after a careful consideration of the best men available. The right man will not only promote sane, honest, and clean athletics, but he will also do much for the spirit of the whole school. He is in closest touch with the students, who believe in him and with him and he can wield a mighty influence.

"As the supervisor or coach is nearest the moral life of boys, he should be a member of the faculty as the added dignity of the position will be of invaluable help to him. It is of the utmost importance that he should be of irreproachable character as his influence extends not only to the members of the teams but also to the whole student body. Character is developed more outside the school room than inside and to a large extent in play activities. It is harder to enforce discipline on the field than in the class room or gymnasium, so the coach should be a man of positive, forceful character. As a member of the faculty and yet as the 'partner' of the boys in their athletic ambitions, the coach may fill an important duty in helping the teachers and the boys understand each other.

"He must be a student of boys—that is, he must understand them, and be in sympathy with their ambitions and ideals, now strangely incomprehensible to many of us who were boys once ourselves. He must have a technical knowledge of the sport or sports he directs, otherwise the boys will lose confidence in him. He must *know,* not try to 'bluff.' The coach who does not know his game cannot control his boys or hold their respect. He should not be overworked during the day, so that he can have the required energy for his work with the boys after school hours.

"It is not difficult to draw up plans and specifications for the type of coach desired but to obtain him is a different matter. The supply of athletic coaches for high schools lags far behind the demand. It is the duty, if this condition exists, of our universities to assist the high schools in their search for the men for the important tasks outlined, since athletics has such an influence on school life. I am glad to announce that the University of Illinois will next year open a normal school of physical education. It will be the purpose of the department to develop trained men, capable of taking charge both of athletics and of physical training proper. Courses will also be arranged for students, who intend to teach but who desire to take up a limited amount of work along these lines. It would be a great advantage to any teacher to be able to coach at least one branch of sport, not only because of the greater hold he would secure on his pupils but also as a matter of pecuniary return to himself. If sufficient interest is manifested, a course will be offered in the summer session at the university. I shall be glad to discuss this project with all teachers, who are interested.

"In conclusion I desire to emphasize four factors really vital in keeping athletics on the high plane which we all desire: I. There should be government of athletics, firm, sound, and moral yet sympathetic.

II. Good coaches should be obtained.

III. Athletics should be for the many not for the few.

IV. Games which can be played in after life, should be encouraged.

"With the tendency of our people to live in congested centers, the need for athletics constantly increases. The great cities especially recognize this and establish playgrounds, not only for the young but for 'grown-ups.' By means of athletics we can assist in maintaining the physical vitality of our people, not only serving this great purpose, but also giving us natural pride that we continue to be first in all the world in athletics."

W. L. Childs, New Trier Township High School, was the next speaker. Following are the secretary's notes on his address: This is the day of Olympic Championships and scientific training. Need of physical exercise increases with complexity of civilization. Education is a great thing, but health is more important. The ideal of physical training should be to fit a student for life's work. Work as now carried on in high schools is good enough to warrant carrying it farther.

Two classes of exercise are carried on at present. Mass in the gymnasium and the competitive sports. The latter seems now for the few and is frequently in the hands of an incompetent director. The German and Swedish systems do not meet our needs. All training should be under physiologically correct methods. Exercise should be daily instead of weekly. Students should at all times be kept physically fit to insure good work. Only regular, proper exercise brings health.

After exercise, time should be given for the circulation to become normal before work, to insure best results. Now there is no time for bathing, dressing, etc., and many catch cold. Cause of poor work:

1. Schools not equipped.
2. Same floor space used for mass work as for apparatus and no time for change.
3. Several teachers are necessary for large classes and these are hard to get.
4. There is an element of danger in all apparatus work and many parents object.

Teachers drop this work and devote the time to the straight line, showy work which is a heavy drag on teacher and pupil alike. It demands just as close application as any study and hence is no recreation.

Nearly all teachers in mapping out the work have followed the lines of least resistance. This means we have selected the very poorest forms of exercise. A little calisthenic work, however, is valuable and may be given to correct faults of posture and for disciplinary effect.

The training in athletics equals that of the gymnasium method and will prove more valuable to the individual. The exercise of the heart and lungs is natural, caused by the exercise of the games which they like to play, whereas the forced breathing by the other method is unnatural. "Breathe through the legs" was recommended. Habits learned will continue. Health and strength cannot be stored up. They can be continued by the habits that won them. Dr. Angell said that the motor areas of the brain grew with the training of the muscles. Mass exercise develop memory and co-ordination, but play does the same and goes much farther, developing the powers of alertness, concentration, decision, self reliance.

Gymnastics have nothing to do with moral growth. Can we afford to miss the means to attain it? Games and contests form character and, properly supervised, good character. No one needs to be taught unfairness; the opposite is true. Plenty of healthful exercise for boys and girls is the best way to fight the social evil. Quotes Dr. Wm. Lee Howard and the book "Plain Facts on Sex Hygiene."

Pupils exercising should be uniformed properly and all exercise should be followed by a bath and rub. All should be classified according to physique and put to the proper work.

In New Trier Township school the first and second year pupils meet three times per week, swimming to take one of these periods. One lesson period is sufficient for each. All must take part. All assemble first for roll call and then different classes are assigned to different leaders and the work is begun. One leader remains with the apparatus. Work begins and on blowing of the whistle each squad moves from one piece of apparatus to another, or gives place to another squad in the game, thus exercising all.

Interclass handicap games are played and these events are entirely in the hands of the students. Mr. Childs thought the physical training department should secure definite ends. It should develop courage to brave physical danger and pain; quick obedience to authority and the will to do and fight to a finish; control of passions and fair play. He thought all unscrupulous coaches should be eliminated as one big step toward betterment.

Quotes Dr. McKenzie of the University of Pennsylvania: "We need men with clear brains, flushed with blood driven from a sound heart, and purified in capacious lungs, men whose bodies are the keen, well tempered instruments of the well-trained, well-stored mind. These are the men from whom we may expect audacity in approach, courage in attack, and tenacity in overcoming the problems which stand in the way of progress."

The executive committee of the section as finally selected is as follows: J. F. Wiley, Mattoon, chairman, term expires 1914; H. H. Edmonds, Clinton, term expies 1915; W. L. Goble, Elgin, term expires 1916.

AGRICULTURAL SECTION.

The meetings of the Agricultural Section of the High School Conference were held Friday, November 21, 1913, in Morrow Hall College of Agriculture. Mr. A. C. Norris, of Rockford, presided at both morning and afternoon sessions. The first topic discussed was "Introduction to Agriculture in High Schools," by Mr. W. L. Eikenberry, University of Chicago High School. His paper was substantially as follows:

"The entry of the vocational subjects into the high school program has a certain parallelism with the earlier introduction of the sciences. It was in the form of a single subject, natural philosophy, that the sciences first secured entrance into the curriculum, and it is as the single subject agriculture that the rural vocational material for boys has become established in the high school. The comparison may be carried even farther, for as natural philosophy has been split into physics, chemistry, botany, et cetra, so is agriculture in process of evolving into agronomy, animal husbandry, soil studies, rural economics, and other studies. Some such division is the necessary accompaniment of the expansion of the early unit or half-unit courses into three and four year courses. Some brief reference to the history of the sciences in the high school may be pardoned, therefore.

"The course in natural philosophy was a general one. It was at liberty to take up any of the phenomena of nature which seemed worth while. The principal criterion for the admission of new material into the course appears to have been its interest and value to the student. The result was a course that was 'worth while,' if we may believe the expressions of appreciations yet to be heard from the older generation. This original single science course has been displaced by the various special science courses. As each of these in turn has been organized in the high school by men trained in college laboratories, the principle of organization has been the completeness and symmetry of the development of the science rather than the interests of the pupils. Furthermore, each science has been organized independently of the other sciences and thus the unity of the whole field of science has been lost to sight. We have sealed each of our sciences up in its own water-tight compartment, forgetting that the student of botany needs to know chemistry, that the student of physics should have first learned chemistry while it is equally imperative that the student of chemistry should have previous acquaintance with physics; we have forgotten that physical geography in the first year demands a working knowledge of all the other sciences, and it is even possible that some of us have forgotten that agriculture has its roots deep in all science.

"The need of an elementary knowledge of general science as a preliminary to successful and efficient study of any one of the sciences has been recognized, and relief has been sought. It was at one time fondly hoped that the way lay through the work in nature study in the grades. The experience of high school teachers who have attempted to build upon this foundation has developed its insecurity. As we look back upon the past it is easy to see that we had no good right to expect very much from the grades. The grade teachers are expected to be paragons of versatility and masters of a large number of subjects, but it is hardly possible for many of them to possess either special interest or efficient training in science. The conditions of their work and training are limiting factors. Exceptional cases there are in which the teacher's scientific interest is such as to overcome all obstacles, and there are also schools in which a special science teacher is employed. However, the number of pupils turned out under these more favorable auspices is not great enough to notably affect the average. In rural districts, where special teachers cannot ordinarily be employed, the amount of efficient science work accomplished is likely to be small.

"Recognition of the fact that the high school must solve its own problem has created a demand for an elementary general science course in the high school. This demand has grown much more rapidly than has the means of meeting it. There are in practice, however, a respectable number of first year courses which pass under the name of general science.

"The close relations of agriculture with all of the sciences is such that the need for a general introduction is felt in agriculture as well as in the specialized sciences. Agriculture draws its materials from all of the sciences; its progress is hindered at every step if the elements of science are unknown. The interdependence of the science of agriculture and the more formal branches of science has always been obvious; but the importance of this relation has not been always clearly recognized as a conditioning factor in the organization of curricula. Attempts have indeed been made to use agriculture as the introduction to the formal sciences and there is no doubt that it can be so employed. Such an arrangement might conceivably be of assistance to the formal sciences, but it does not place agriculture itself in an advantageous position.

"The desirability of a scientific introduction to agriculture is nowhere more clearly recognized than in some of the more recent textbooks. For instance a high school textbook in agriculture issued in 1913 has its first chapter of 60 pages devoted to chemistry and the third chapter, 63 pages, is wholly botanical. In neither chapter is there any considerable amount of applied material. Thus there are in the first part of this book of 400 pages more than 120 pages which would ordinarily rate as formal science; must be interpreted as strictly preparatory to the body of the text. The book mentioned is not alone in its recognition of the need of preliminary science training.

"It is possibly necessary, at this point, to defend one's self against certain misconceptions which may arise when we speak of the work of the first year as preparatory. The designation might be interpreted to mean that the first year, being preparatory to agriculture, should be devoted so wholly to fundamental propositions in science that there could be no time given to agricultural applications. Such is not the intention. In the opinion of the writer every science course should pay its way in knowledge and training that is immediately of interest and use. The problems which are considered should grow out of the interests of the pupils, and the principles which are developed should be applied to situations arising in the environment. These situations will not be exclusively agricultural, but they will be at least practical. When a science course of any sort, or any part of it, depends for its justification only upon the belief that it is preparatory to something else, and that it therefore will be useful sometime, somewhere, in the indefinite future, the place of that course in secondary education is open to serious question.

"At the University High School of the University of Chicago we have been working for several years upon a general science course. The principles which we have tried to follow are those which are discussed in this paper. This course is now in operation and in its fourth year. (See outline appended to this paper). We believe that a course which is called 'general science' should include some proportionate representation of each of the sciences. Each should be included, not for the sake of the science itself, but for the sake of the pupil and of the other sciences. We believe, also, that the materials of any one science should not be segregated but should be instead very closely interrelated. If the course is to be general it must be synthetic.

"An objection is frequently made at this point that it is not possible to secure teachers properly qualified to handle a course which contains elements of so many sciences. It is insisted that present day teachers are specialists and cannot be expected to know anything about even science subjects other than their own. The notion that teachers do not at any rate have interest in subjects other than their own certainly secures some support from conditions at teachers meetings, where it is often difficult to get a botany teacher to sit through a paper on zoology or a physics teacher to attend to a paper on chemistry, or either of them to listen to the teacher of agriculture. The fact that such narrowness exists does not justify it. It would be much easier to justify the assertion that the teacher who does not have a working knowledge of all the sciences, who cannot appreciate the relation of other sciences to his own, has no place in the faculty of a secondary school. Specialization is good, but those who have been able to lead in special lines are precisely those with breadth of vision and training.

"Quite aside from the question of the desirability of such narrow limitations to one's intellectual horizon, the actual conditions of instruction in existing high schools must be considered. In the course of an investigation into conditions existing in the first year science in Illinois high schools certain data bearing upon this point were received from about 200 schools. It appears that in this representative group of schools 69 per cent. of the teachers of first year science were in 1911-12 handling at least four subjects; 40 per cent. were handling at least five subjects; and 26 per cent. were handling 5 or more subjects. It is perfectly obvious that under present conditions and quite aside from fitness or desirability, the teachers of this state are instructing in a range of subjects comparable in breadth with the range of materials in proposed general science courses. The writer does not wish to commend this condition, but its existence must be recognized. Furthermore, the condition is likely to remain for it is dependent upon the size of the schools.

"Experience indicates that a departmental organization with specialization of teaching cannot usually be secured in a school of less than 400 or 500 pupils.

Of the 432 high schools which appear in the State Superintendent's list for 1911-12, approximately 400 had an enrollment of less than 400 pupils. Two hundred and seventy-eight schools, more than 64 per cent. of the total, had but 100 or less pupils. The impossibility of specialization under these conditions, particularly in the rural high schools, is obvious. It appears therefore, that the larger number of teachers of first year science are in fact teaching a wide range of subjects and will continue to do so. It is not evident that they will have any more difficulty with such material in a single synthetic course than they now have when it is administered in separate courses. Rather the contrary may be expected. The problem of the preparation of the science teacher for general science or for specialized sciences is in most schools the same problem.

"A serious problem in the formation of a course in general science is that of the selection of material, and this process is essentially one of elimination. With the whole field of science to draw from, there is no lack of valuable and suitable material. In proposing such a course there is always the temptation to list a very large quantity of available materials with the excuse that from this list the individual teacher will be able to select that which is most useful under particular circumstances. Any suggestion which is put forward upon this basis is sure to confuse rather than assist. It does not organize. The teacher who is able to organize a workable course out of such a catalog of the phenomena of the universe would be able to do it without the suggestions; the less able teacher needs assistance in selection, but this is precisely what the extensive list does not supply. It is therefore incumbent upon the one who proposes a course in general science to summon such courage as he posesses and to make a definite proposal of an amount of material which is sufficiently limited to be within the possibilities of a year's work, conscious that he will be criticized alike for what he includes and for that which he excludes. In accordance with these principles I am proposing for your consideration the course in general science which we are using and which is appended to this paper.

"You will observe that our primary outline is based upon environment and has at least superficially a geographical aspect. We take up in succession some of the phenomena of the atmosphere, of the waters of the earth, of energy, of the superficial part of the earth's crust, and of the living beings of the earth. It must not be supposed that these titles are entirely descriptive of the contents of their parts. The title of the last part might appear to indicate that all phenomena of life are restricted to that part, but examinaion of the subtitles will show that biological phenomena enter into every one of the five primary divisions. In the same way physics, chemistry, geography, agriculture, domestic science, and industrial applications are more generally distributed than the brief main titles might at first appear to indicate.

"We begin our work with certain phenomena of the air because the air is both common enough and mysterious enough to catch the child's interest at the first, and we believe this to be pedagogically important. We raise certain questions regarding the physical characteristics of the air, if the pupils do not first bring up these questions, and attempt to develope the answers upon an experimental basis. After interest in these facts is somewhat satisfied we proceed to the closer human interest of the seasons and weather. At every step we spend considerable time in drawing out from the class a series of questions which may then be solved experimentally either wholly or in part. By the time we have completed this amount of work there have usually been a number of questions regarding the structure of the air, or at at any rate the class is ripe for such questions and this leads up to a discussion of this topic. It is but a step from this to notions of chemical change and to the chemical activity of plants in food-making. A thorough consideration of the composition of the air demands some reference to dust, its character, and its human importance. This in turn introduces us to bacteria. The study of bacteria is taken up in connection with their distribution by the air, but our work is not limited narrowly. Since there are no precedents for a course in general science we feel entirely free to pursue the subject into the domains of agriculture, domestic science, industry and public health so far as time permits and circumstances demand.

"Part II is introduced by Sec. X, which as you will observe treats of the three states of matter. The section appears in answer to questions and references which have arisen in previous work involving the relations of liquids to gases and possibly to solids.

Relation to environment is found throughout in this section and in the following one on pressures in fluids. In these two sections water is considered somewhat in detail; in the following sections the broader relations of water in the form of lakes, rivers and oceans is brought to attention. The Great Lakes are used as a concrete example and their climatic, commercial and sanitary importance are brought out. The ideas which are developed in the study of concrete data are applied more generally as in the interpretation of oceanic influences, or the emphasis of the importance of water supplies in villages and at country homes.

"Transition to Part III without serious break is secured by the use of the example of running water to develop ideas regarding work and therefore to introduce the part. The point of departure for Part IV is the same—work by running water—but with emphasis upon physiographic phases. Part IV may serve to illustrate one phase of the elimination which has been practiced in arriving at the present selection of materials. There are of course multitudes of interesting and profitable things about the earth's crust that might be taught to first year pupils. It is believed, however, that the thing most worth while at the present moment to these pupils is that which is nearest to them and which because of its presence calls for rational explanation. We have therefore eliminated all but the briefest reference to the deeper strata, and all consideration of mountains, plateaus, earthquakes, volcanoes, geysers, coral reefs, and othr remote natural features. These are left to physiography. We have chosen to deal with the nature of the soil and its human relations. We do not expect that the pupil will have a knowledge of physiography, but we do hope that his relation to the soil will be a more rational one and that in acquiring this new relation he has incidentally acquired considerable knowledge of certain physiographic processes such as weathering and glaciation. This knowledge should be useful to him in any future work that he may do in physiography.

"In Part V we have a rather intimate relationship between biology, agriculture, and domestic science. The general character of these topics is possibly well indicated in brief form in the outline.

"The characteristics of the general method of presentation in this course have been suggested in the preceeding discussion. In all cases we have found it possible to secure good work when the pupil felt that he knew what he wanted with the knowledge he was seeking, either in explaining his environment, in solving the problem raised in the classroom, or as a stimulus to his imagination. It is in this light that our selection of significant materials must be considered. In all cases where it was felt necessary to round out the work by the use of materials not likely to be called out by the interest of the pupils we have sought some way of making them significant.

"The method of attack upon the new topic may be made to contribute very much to the importance and interest which it assumes in the mind of the pupil. If the matter is one that is familiar in everyday experience, but with some unexplained factors, the beginning is made upon the firm ground of former experience. As quickly as possible the unexplained factors are developed, and the pupil is brought face to face with the problem which in the existing state of his knowledge he can not solve. The difficulty usually lies in lack of knowledge of associated phenomena. These, then, must be investigated, and from this investigation return is made to the original problem.

"This is not the place to discuss the desirability of greater motivation of the work presented to students in college and in the later years of the high school, in which it may be supposed that greater vision and perspective have been developed. Both theory and experience seem to indicate that in the first year of the high school the immediate reason for a particular piece of work needs to be kept above the horizon. In this course, therefore, we frequently introduce topics for the complete consideration of which the pupil is not prepared. As soon as the problem is properly developed the pupil is guided in making a sort of side excursion in quest of the necessary information, later to return to the solution of the original problem. For example, we may take the study of the burning candle. Before investigation of the flame has proceeded far, the teacher will manage to call attention to the presence of water in the flame. The pupils soon convince themselves that the water does not enter the flame as water, and that its presence cannot be explained by any facts with which they are familiar. Usually, they are soon convinced that it must have been formed in the flame. Questions regarding the nature of water and the possible method of formation lead to a consideration of water as a chemical compound and some discussion of chemical combination. When, by experiment and reading, some understanding of these things has been secured, it is not difficult to explain the presence of water in the flame. In the course of this study the pupils have been acquiring knowledge of chemical fact and theory, but it has been acquired because they have had a definite present use for it in a concrete situation, and not in the nebulous hope that some future occasion might demonstrate its value.

"Our experience has been that the motivation thus furnished is of great importance. It is believed, too, that it is a healthy experience for youth to come face to face with a problem offering real difficulty, and to find that it yields when proper study has been made of all the facts. So are the problems of life solved.

"The amount of time given to the general science course has been seven periods per week during one year. Our school year, it may be added, does not open until October 1, and therefore is one month short of the usual time. Of the seven periods, four are ordinarily given to laboratory work and three to recitation and discussion, but this arrangement is subject to modification if conditions demand. The laboratory exercises are performed by the pupils individually unless there is some good reason to the contrary.

"As to our results we cannot speak with the definiteness that we would desire. The science of educational measurement is not yet sufficiently advanced to enable us to measure these educational quantities in exact units. The difficulty is not peculiar to the general science course. We find great difficulty in expressing in exact terms the results of any of our science work. It is of course possible to make comparison of grades in the science classes of the upper years of the high school as between those who have had preparation in general science and those who have not had this preparation. Such an investigation is under way, but the results are not yet available. The effect upon science elections would also be of interest, but there have been within the last two years such changes in the size of the school and in the basis of election as to invalidate any conclusions from such data. We are therefore thrown back upon more subjective data. We have been gratified to have unsolicited reports from the science departments, from the classes in domestic science, and from the department of physical culture and hygiene, that the results of our work are distinguishable. We have also been gratified by the number of questions, intelligent questions, which have been asked by pupils in the general science classes. The fact that among these questions there are many which look ahead to topics which are to be discussed within a few weeks in the ordinary course of the work leads us to believe that we are following a sequence which is not unnatural to the mind of the child. Another large group of questions relates to matters that are too difficult for explanation in first year work. In these cases we can only refer the pupil to the special science courses. We take it that questions of this sort indicate interest, an inquiring mind, and some real thought upon the fundamental things of nature."

Appendix—Outline of General Science.

Part I. The Air and Our Relation To It.

I. Some physical characteristics of the air.
  A consideration of the more obvious physical properties of air, such as weight, pressure, compressibility, expansion by heat.
II. Temperature changes and the seasons.
  Relation of changes in air temperature to length of daylight and inclination of sun's rays. Human interests in seasons.
III. The water of the air.
  Humidity of atmosphere, humidity in homes, schools and out-of-doors, condensation of water, dew, clouds, rain, etc.
IV. Weather.
  Weather of temperate zone, weather maps, weather bureau, interpretation of atmospheric phenomena.
V. Structure of air.
  Questions arising in the preceding chapter lead up to consideration of the molecular theory in simple form.
VI. Composition of air.
  A simple discussion of the fundamental ideas of chemical action. Based upon a laboratory study of combustion.
VII. Relation of the air to chlorophyll work.
  The origin of carbohydrates and the relation of the process to the atmosphere. Fundamental importance to all living things.
VIII. Dust, molds and bacteria of the air.
  Starting from the dust constituents of the air, some consideration of bacteria and their relation to decay, disease, agriculture and industry. Culture method used principally.
IX. Flying insects as distributors of bacteria.
  Considers the house fly principally, but notions received are applied to general problems of relation of insects to disease.

Part II. Water and Its Uses.

X. Ice, water and steam.
A discussion and laboratory study of the three states of matter; their practical applications.

XI. Water pressures, buoyancy and density.
Laboratory study of the topics; discussions of their applications.

XII. Climatic influences.
The specific case of the influence of the Great Lakes upon climate in the surrounding area, using data from Lake Michigan. The principles developed are related to the larger problem of the oceanic influence.

XIII. Commercial relations.
The commercial importance of great bodies of water and the control of human activities thereby.

XIV. Water supply and sewage disposal.
These problems are related to the preceding studies of water, and of bacteria, and their importance in both city and country is developed.

Part III. Work and Energy.

XV. Work by running water.
Ideas of work, both mechanical and physiographic, are developed by reference to the work of running water.

XVI. Work and machines.
An introduction to the ideas of work through the agency of simple machine—the pulley, and other machines.

XVII. Energy and its transformation.
Proceeds from ideas of work to those of energy, and the transformation of mechanical energy into heat.

XVIII. The sun as a source of energy.
The sun is considered as an immediate source of energy for certain purposes, as photosynthesis, and as the ultimate source of energy.

XIX. Energy for plants and animals.
Respiration, considered as an energy-giving process.

Part IV. The Earth's Crust.

XX. Effect of natural forces upon the earth's crust.
Introductory.

XXI. Structure and composition of the soil.
Sand, gravel, clay and humus as constituents of the soil.

XXII. Origin of the soil.
Includes weathering, glaciation, etc.

XXIII. Soil, water, drainage and irrigation.
Considered in relation to agriculture.

XXIV. Erosion and sedimentation.
Their effect upon soils.

XXV. Life in the soil.

Part V. Life on the Earth.

XXVI. The plant covering of the earth.
The natural vegetation of the earth and its value to men.

XXVII. Absorption from the soil by plants.
The method, and structures of absortion, and the materials absorbed.

XXVIII. The world's food supply.
  Consideration of the manufacture of food in the plant, the importance of this manufacture to man, and the great industries founded upon it.
XXIX. Utilization of food in the plant.
  Digestion, transference, storage, and assimilation.
XXX. The nutrition of animals.
  The ideas of digestion, assimilation, etc., from preceding chapter are applied to the more complicated problem of animal and human nutrition.
XXXI. Classification of animals and plants.
  A brief account of the principal groups of living things.
XXXII. Reproduction in plants and animals.
  Some illustrations of how new organisms come into existence.
XXXIII. The struggle for existence.
  Illustrations from both natural and agricultural situations.
XXXIV. Parents and offspring.
  An elementary discussion of variation and heredity in their practical aspects. Plant and animal breeding. Importance of linear heredity.

"A Course in Animal Husbandry" was next discussed by Mr. R. R. Snapp, Principal John Swaney School, McNabb. He spoke as follows:

"Time forbids the including of every subject of value in the school program. Making such a program consists simply in determining what subjects and what parts of subjects are most important. Animal husbandry has a right to an important place in high schools of our state as a subject of economical, intellectual, and cultural value.

"With but one semester to devote to the subject, and this is probably all that should be given by the average city high schools, the topics touched upon must necessarily be general principles of animal husbandry rather than detailed information about the various classes and breeds of animals. However, there is danger of becoming too general, so much so that the pupil may forget that he is studying about live animals and imagine that he is studying a subject as abstract as chemistry sometimes seems to be. Enough detailed information should be given to make the student realize that he is learning facts that he is going to use either economically in his business, or as useful general information. An outline of the study of cattle will show just how much detail I think should be given and how it may be introduced. Now cattle will be harder to teach in high schools than horses, but not as hard as sheep or swine. It is for this reason that I choose the topic for an outline, at the same time that I advocate the study of horses first. By the time the subject of cattle is reached the students will have become somewhat familiar with animal husbandry terms gotten through the study of horses and the principles of feeds and feeding. He will also have had some practical work in stock judging, for horses will be more accessible to the average high school for class work than all the other classes of live stock put together. With all such preliminary work out of the way, the subject of cattle can be taken up with assurance that the pupils know what is expected of them in the way of daily recitations, note-book work, and written reports.

"The first lesson on cattle should concern itself with the origin and history of our domestic breeds. The subject matter should be given largely by the teacher, the pupils taking notes on the important items. Volunteer information from the students about cattle of ancient times, as gathered from the study of ancient history, Latin, and the Bible should be welcomed and supplemented by the notes of the instructor.

"The second day should be devoted to a development lesson. After a ten minute quiz on the lecture of the previous day, the fact that all cattle are divided into two distinct types according to their uses should be developed by asking pertinent questions, by calling for descriptions of cattle kept at home or on farms that have been visited by pupils, and by any other way that will enable the class to see that cattle differ greatly in conformation and temperament and that these differences necessarily affect their value as producrs of meat and dairy products. After the beef and dairy classes have been established as types markedly distinct, the characteristics of each should be worked out, the facts coming from the pupils as far as possible, but always supplemented and enlarged upon by the instructor.

"The subject of breeds can be developed in much the same way, though here more information will have to be furnished by the teacher. Only the Shorthorn, Hereford, and Angus breeds of beef cattle, and the Jersey and Holstein breeds of dairy cattle need receive very much consideration, though the names and distinguishing characteristics of the other common breeds should be memorized by the class. A table giving the name, color, shape of head, and native home can be worked out and will be found very helpful in remembering the important facts about each breed.

"Then should follow several visits to near-by farms where cattle of different breeds may be seen and their characteristics noted. High school classes in towns will find the local stock yards a very mine of cattle treasures in the form of fat steers, feeder cattle, and butcher stock. Some work in judging should be done in connection with these trips, but it should be attempted only when the animals are gentle enough to handle safely. Comparisons of breed types and general conformation can be made in all cases, but to accurately place a ring of animals,—that is closely enough to bring out any very fine points in judging, requires the using of the hands more than the ordinary farm animal will permit.

"Visits to farms should, if possible, be made when the herdsman is present. Most cattlemen are eager to tell about their stock and the class will usually learn more about the actual business of breeding and raising cattle from listening to the herdsman for half an hour than from two or three hours spent in the class room or in reading reference books.

"The study of types and breeds and the work in judging will probably take about two weeks, about half the time that can be spared for cattle from a semester's course that must deal with all classes of domestic animals. At first thought it may seem that too large a proportion of the time is devoted to the study of breeds, since in the economic production of cattle the question of breed is of minor importance compared with the problems of care and management. But the average high school pupil is not studying the subject of cattle with a view of making money from them. The place where he will most frequently come into contact with cattle will be at state fairs and fat stock shows where knowledge of breed type, and skill in rating points of excellence is an important factor in the enjoyment he will be able to get from the exhibits. The few boys in the class who may intend to own cattle cannot hope to become expert cattlemen in four weeks of study, no matter what subject matter might be presented. They must get their technical training somewhere other than at a high school that offers but one semester of animal husbandry.

"The remaining two weeks should be given over to a consideration of the feeding and management of cattle and the testing of milk and cream. The work here should be in accordance with the principles of feeding studied earlier in the course, but it should also be in accordance with the practice of intelligent, experienced cattlemen. The mere fact that a given ration contains the proper amount of protein, carbohydrates, and fat is not conclusive proof that it is a good ration for a bunch of steers. In addition to being properly balanced, it must be composed of economical feeds that are palatable to cattle, a qualification very often lost sight of in the class-room, but one ever present in the feed lot.

"Under the subject of management are included such topics as the proper housing of beef and dairy cows; the different methods of breeding cattle with a view to their improvement; the comparative advantages of spring and fall dropped calves; the advisability of raising calves by hand; the age at which cattle may be marketed and the methods of marketing. If such facts were taught intelligently in our public schools, fewer people would disgrace themselves by offering senseless solutions to the problem of high meat prices.

"The other classes of animals should be studied in much the same way. More time can profitably be spent on horses for the pupils will have a greater fund of information here than they will have about cattle. Consequently, they are apt to be more interested and enter into detailed discussion with more eagerness. This statement applies particularly to judging. Moreover, the average man will come in contact with many more horses than he will with cattle and for this reason should know more about them.

"Sheep and swine are less interesting than cattle to the average man and perhaps also of less importance. For this reason less time should be spent on these classes and fewer details given. Perhaps one week on breed type and judging and one week on care and management will be all that can be spared for each of these classes without unduly slighting the horses and cattle.

"Poultry should have at least two weeks of time. Being distinctly different from any of the other classes, poultry should be either the first or last to be studied. I should say put it last by all means; not necessarily because it is of least importance, but the term 'Animal husbandry,' suggests horses and cattle, and hogs, and sheep and the boys electing the course expect to study about such things. If they are confronted at the beginning of the course with 'chickens,' a subject belonging to domestic science in their opinion, they are apt to lose interest at the very start. If on the other hand poultry comes last, they welcome it eagerly as a field where each of them may put into practice the principles taught, for almost every boy comes from a home where chickens can be kept.

"Some members of the class, realizing the impossibility of their owning herds of cattle or flocks of sheep in the near future, may have become somewhat discouraged with the subject of animal husbandry and tend to regard it as something not very vitally connected with their lives after all. But if the subject of poultry is managed rightly during the last three weeks of the semester, any such pupil will be aroused from his lethargy and will begin to fit up his back yard as a poultry establishment.

"In discussing the method of handling the subject of cattle I made reference to the keeping of note books by the students. I regard such note books an almost indispensable part of the course. In them should be entered notes on all outside material presented by the instructor; notes on reference readings;

reports on field trips; tables of the different breeds of each class of animals, showing native home, color markings, and distinguishing characteristics of each breed; tables of statistics of the live stock resources of the country and the state; names of noted breeders and exhibitors of live stock; live stock market reports of the daily receipts and the top prices of cattle, hogs, and sheep at Chicago for monthly periods, one class only being taken at a time.

"The place live animals should occupy in a course in animal husbandry is a much mooted question. Many schools if asked why animal husbandry is not being taught by them, would no doubt reply that they do not have the animals with which to teach it. Now, no school is so situated that this excuse should be regarded as a valid one. A one semester course in animal husbandry could be given very successfully without making use of more animals than are found on a single average corn belt farm. And what high school, outside of Chicago, is not within easy trolly car and walking distance of a good farm?

"Horses, because of their accessibility and the general interest all people have in them, should receive the most attention. Dairy cows would come next, followed by hogs, beef cattle, and sheep in the order named. Two or more laboratory exercises may if necessary be done with a single animal. One period may be used in naming the points of a horse and locating them on a live animal; another in harnessing him and hitching him to a buggy; a third in determining the relative lengths of the head, neck, shoulder, body and croup and the per cent of the total weight borne by each pair of legs. Such information is not so very important, but it helps the pupil to see the different parts of the animal in their relation to each other.

"As noted under the discussion on cattle, frequent visits should be made to nearby farms for the purpose of inspecting the animals as well as the methods of feeding and management practiced by the stockman. Shipping day at the local stock yards will usually offer a variety of animals and though they will seldom be gentle enough for judging purposes, they will be found exceedingly valuable in studying conformation and breed type. Such animals together with stock actually handled by the puplis either at home or on farms of relatives, and on which reports should be made, will prove to be fully ample for such a course as is under discussion.

"Before beginning to teach Agriculture in a high school I was very much in favor of home project work. Although I have had my enthusiasm somewhat dampened by the difficulties I have experienced in inaugurating it in the high school in which I am teaching, I still think that such work is very desirable from the standpoint of both the pupil and the teacher. Especially is this true where the pupils live in the country and where the majority of the boys taking the course expect to become farmers. Attention to details is one of the things that farmers must begin to consider more seriously if farming is to be a systematic business. The leaks must be stopped. Simple cost accounting is the one and only way of finding out just where the leaks are.

"The average farmer will not bother with any very detailed system of book-keeping, and perhaps he does not have time for it; but the young farmer boy attending high school is not so pressed with business that he cannot keep brief, but accurate records of the amount of corn eaten by the fattening hogs each week, the pounds of milk given by each cow each month and the amount and cost of feed eaten by her; the number of eggs gotten in a month and the value of the feed eaten by the poultry during that period. All of these accounts need not be kept at the same time, but during the four and one-half months that animal husbandry is studied at school, at least two important home projects should be carefully carried out under the supervision and direction of the instructor. The planning and carrying out of such work will afford an opportunity for the teacher and pupil to get better acquainted than they can possibly do in the class room. Home project work, if not actually required, should at least be strongly encouraged and liberal credit should be given to the enterprising students that elect to do it.

Domestic Animals and Their Products.

I. Introduction: (1 week).
    1. Value of live stock on the farm.
    2. Advantages of live stock farming.
    3. Disadvantages of live stock farming.
    4. Number and value of horses, cattle, sheep and swine in the U. S.
    5. Number of each per capita. Compare with other important countries.

II. A. The Horse: (4 weeks).
    1. The horse, an indispensable servant of man.
    2. The development of the modern horse.
    3. Types and breeds of horses.
    4. External anatomy of the horse.
    5. Judging horses.
    6. Brief history of famous horses.
    7. Brief study of a few pedigrees.
    8. General principles of horse feeding using only common terms.
    9. Management and care of horses.
        a. Care of mare and foal.
        b. Stabling of horses.
        c. Common diseases of horses.
        d. Proper manners of the road.

B. Practical Exercises:
    1. Student records, keeping "tab" of the characteristics of animals at home, as to performance, pedigree, etc.
    2. Reports on observations of horse's intelligence.
    3. Reports on home horses:
        Breed, name, weight, height, age, color, remarks.
    4. Lesson pointing out names of external parts of a horse.
    5. Use of score card.
    6. Comparative judging.
    7. Sketch diagram of horse writing in names of parts.
    8. Practical work in harnessing and hitching a horse.
    9. Plans for a horse barn.
    10. Observe common diseases and their method of treatment by the local veterinarian.

III. A. Feeds and Feeding: (2 weeks).
    1. Use of feed eaten by animals.
    2. Classification of feeds according to bulk, method of harvesting, and composition.
    3. Function of the different food nutrients; protein, carbohydrates, and fat;—also water and ash.
    4. Digestibility of feeds; describe method of determining.

5. Food requirements of animals,—balancing rations.
6 Balancing rations for horses of different ages using various combinations of feeds.

B. Practical Exercises:

1. Determine weight of 1 quart of corn, oats, and bran.
2. Determine the size of a fork full of hay that will average 5 lb.
3. Reports on method of feeding horses at home.
4. Work out Nut. Ratio of rations used at home.
5. Suggestions as to ways of improving home rations.

IV. A. Cattle: (4 weeks).

1. History of present domestic cattle.
2. Types of cattle, beef and dairy, and characteristics of each.
3. Breeds of beef cattle; of dairy cattle; characteristics of each breed.
4. Points in judging beef cattle.
5. Market classes and grades of beef cattle.—See Market Report.
6. Feeding beef cattle, balancing rations; sample rations used by successful feeders, use of silage in connection with cattle feeding.
7. Management of beef cattle.
   a. Care of breeding herd.
   b. Care of calves.
   c. Housing of beef cattle.
   d. The pure bred cattle business.
8. Cuts of meat; their location in the carcass and value for food.
9. Breeds of dairy cattle.
10. Points in judging dairy cattle.
11. Feeding dairy cattle: How different from feeding beef cattle?
12. Management of dairy cattle:
    a. Care of herd.
    b. Testing of milk.
    c. Care and handling of calves.
13. Dairy products; their production and care.
14. Common cattle diseases.

B. Practical Exercises on Cattle.

1. Report on home cattle:
   Breed. Number. Average Weight. Market Value. Age.
2. Naming of external parts of a beef steer.
3. Naming of external parts of a dairy cow.
4. Judging exercises.
5. Visits to farms where cattle are kept.
6. Reports on market quotations from daily papers.
7. Problem: Buy a car of feeders at Chicago; feed them 150 days and ship them back. Give an itemized statement of all receipts and expenses.
8. Keeping of daily milk records of home cows.
9. Testing of milk by Babcock test.
10. Report on detailed history of one breed of cattle.
11. Visit to local creamery.

IV. A. Sheep (2 weeks).

1. Some sheep history; Value and place of sheep on a farm.
2. Modern types and breeds of sheep.
3. Sheep judging.

    4. Feeding of western sheep for the market.
    5. Care of breeding flock:
        a. The production of early lambs.
        b. Feeds suitable for breeding ewes.
        c. Shelter for sheep.

  B. Practical Exercises:
    1. Report on home flock.
    2. Report on sheep market from daily paper.
    3. Statistical studies of sheep industry from U. S. Dept. of Agr. Yearbook.
    4. Study of external parts of sheep and two or three exercises in sheep judging.
    5. Problem: Buy a car of western feeders at Chicago. Feed them for 100 days according to standard of feeding. Figure profit at current price of feeds.
    6. Visit to farm where sheep are being sheared.

V. A. Swine: (2 weeks).
    1. Some swine history.
    2. Modern type and breeds of swine.
    3. Swine judging.
    4. Feeding of hogs for the market.
    5. Study of hog market from stock paper.
    6. Care and management of breeding herd.
    7. Cuts of pork and method of butchering.

  B. Practical Exercises:
    1. Report on home herd of hogs.
    2. Reports on daily hog market.
    3. Valuation of home hogs on basis of present hog market.
    4. Problem: Buy 5 sows 2 weeks before farrowing. Fatten both pigs and sows after the pigs are weaned and compute profit, giving full statement of all rations fed and gains made.
    5. Visit local slaughter house and observe method of killing and cutting up hogs.

VI. A. Poultry (2 weeks).
    1. Types and breeds of poultry.
    2. Points of excellence in various breeds.
    3. Care and feeding of poultry.
        a. Laying hens.
        b. Fattening stock.
        c. Chicks.
    4. Housing of Poultry.
    5. Hatching and rearing.
        a. Hens.
        b. Incubators and brooders.
    6. Poultry raising as a business.

  B. Practical Exercises:
    1. Home report on poultry.
    2. Keeping of feed and egg record of flock at home.
       Determine best layers by use of trap nests.
    3. Use of Incubators, possibly at school.
    4. Comparative studies of types with specimens of live chickens.

5. Plans of poultry houses and pens.
6. If possible keep a dozen hens at school building and run experiments in feeding following suggestion of noted poultrymen.

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   - Plumb: Beginnings in Animal Husbandry; Webb Publishing Co.
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   - Davenport: Twelve Studies of Farm Animals; Parker.
   - Purdue Circular No. 29.
2. HORSES:
   - Roberts: The Horse; Macmillan.
   - Johnstone: The Horse Book; Breeder's Gazette.
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   - Illinois Bulletin No. 150, Farmer's 170.
3. CATTLE:
   - Mumford: Beef Production.
   - Eckles: Dairy Cattle and Milk Production; Macmillan.
   - Bulletins:
     - Purdue 153; Missouri 112. Ill. 137, 139, 142, 143, 149. Farmer's Bulletin 143-241, 106 Ill. Circular 152, 115.
4. SHEEP:
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   - Doane: Sheep Feeding.
   - Shepherd Boy: Sheep Breeds and Management; Gazette.
   - Bulletins: Ill. Bulletin 129; Ill. Circular 125.
5. SWINE:
   - Dietrich: Swine; Breeder's Gazette.
   - Coburn: Swine; Breeder's Gazette.
   - Dawson: Hog Book; Breeder's Gazette.
   - Bulletins: Ill. Circulars 123, 136, Farmer's Bulletin 379.
6. POULTRY:
   - Bulletins: Farmer's Bulletins 51, 64, 357, 200, 287.
   - Watson: Farm Poultry; Breeder's Gazette.
   - Bulletins: Farmer's Bulletins 51, 64, 357, 200, 287.
7. FEEDS AND FEEDING:
   - Henry: Feeds and Feeding; Gazette.
   - Jordan: Feeding of Animals; Macmillan.
8. PERIODICAL: The Breeder's Gazette, Chicago."

"Country Life Clubs" was the next topic, which was presented by Supt. George W. Brown, of Edgar County. He spoke as follows:

"The present activities in the interest of permanent and enjoyable life in the open country come from the union of two forces that heretofore have struggled singly and often in direct opposition. Those daily engaged in the making of a living and the building of a life in country places are approaching a harmonious union of purpose with those who, while not in direct contact with country life, do thoroughly understand from lifelong sympathy and study, country life conditions.

"When the energy of the master builders of the country is inspired with the vision of country life progress through the 'rural social engineers' coming from the tillers of the soil and all other useful occupations of life, permanent progress will be made rapidly.

"Permanent advancement in all civilization must rest upon the way people make a living and the manner they live their lives. Scientific agriculture enables the farmer to make a better living while rural sociology assists all in living better lives. These two subjects must be the bond that binds the master builder in country places with the 'rural social engineers' of worldwide vision.

"Country Life Clubs make use of the fact that the means of making a living largely dictates how that life shall be lived. Country Life Clubs assist the individual and society to objectify in the life of self and the community the high ideals of home, school, church, business and government.

"The only power for better things here and now is found in community life and action. The world is moved not by what we say or believe but by the conduct which we visit upon each other.

"Country Life Clubs assist the members and the entire neighborhood into a true community spirit in which the self is forgotten and all push forward to true social service.

"The change in the life of the patriarch Jacob, will illustrate the transition from the service of self to ministering for others. Jacob began his life as a spoiled individualist. He succeeded in defrauding his brother out of his birthright and for safety was compelled to flee to the ancient home of his grandfather, where he engaged in the livestock business with his uncle and father-in-law. He was too shrewd for Laban and started back to the home of his father with all the arrogance of a successful selfish man. He had placed all his flocks and herds on the other side of the brook Jabbok and on the morrow would meet his brother Esau with a new selfish trick. That night he was forced to wrestle with the angel until the break of day and came forth from that wrestling match no longer Jacob the supplanter and individualist but Israel, a fighter for God and a builder of the Hebrew Nation.

"A similar experience must come to us all. Our sinews of selfishness must shrivel and shrink beneath the touch of social service and though lame and halt, we should make a constructive contribution to society.

"Country Life Clubs have their power in giving people the opportunity of assisting each other to realize community ideals.

Some other services that they may do and are doing follow:

1. People are assisted in adjusting themselves to a rapidly changing environment.
2. The individual and social meaning of the work in which people are engaged is revealed to them.
3. The waning power of the home is strengthened by community contact.
4. Deeper sympathy for all beliefs is produced, thus securing community stability.
5. The play and recreation of young people is supervised by directing their social life.

"A new era is dawning. We have long laughed at the divine right of kings, yet we have unconsciously invested every elected representative with the same halo, i. e., that our representatives know what laws should be enacted better than their constituency.

"We are entering an era of monarchial-democracy. While in power our representatives must be monarchs, yet we through democracy will exercise the right of approval or rejection of their legislative action. The Country Life Clubs will loom large in the making and moulding of public opinion as questions of public policy are often referred to the people.

Next followed "A Course in Soils for Secondary Schools"—discussed by Supt. J. W. Morgan, Wood River. His paper, in abbreviated form, follows:

"In attempting to outline a semester's course in soils for secondary schools I feel some hesitation. A government investigator tells us that an inquiry among the agricultural teachers of the country reveals the prevailing opinion that the most difficult phase of their subject is this matter of soils. It is true that there are no projected or worked out courses running through a semester, so far as I have been able to find out. At least no one has approximated values for the subject in secondary schools. The whole matter seems to be in an unsettled state. So what I have to offer today is a collection of suggestions from many sources, modified to some extent by my own school room practice.

"It is time, however, that something be done to estimate a course in soils running through a semester, as the subject of agriculture is rapidly gaining by leaps and bounds to a position of great importance in high schools. A recent report put out by the U. S. Bureau of Education informs us that from May, 1910, till March, 1912, the total number of institutions giving courses in agriculture increased 300 per cent and this increase was almost entirely in secondary schools. This indicates a rapid expansion of the elementary general courses now in vogue. It also indicates the need of some definite suggestions as to what should constitute work sufficient to give soils its proper place in that expansion

."As the material of this paper does not lend itself well to oratory, I shall remind you at this place that what follows will seem like the catalogue of the Greek forces from a page of Homer. Yet as we are all working together to better the position of secondary agriculture, it will be unnecessary for me to ask you to bear with me. Here is an outline of the course:

I. Soil physics.
    A. Introductory.
        1. General facts concerning soils.
        2. Geological origin of soils.
        3. Agencies of rock decay.
    B. The soil mass.
        1. General facts as to soil mass.
        2. The inorganic soil ingredients.
            a. Sources—the soil forming minerals.
            b. Per cent of rock particles.
            c. Kinds of soils.
                1) How soils are formed.
                2) The elements of soil classification—peat, clay, silt, sand, gravel.

            3) Relation of the size of the particles to moisture, air, plant food, temperature, and crops.
            4) Chemical composition of soils.
            5. Types of soil in the community.
            6) Soil areas in Illinois.
- C. The soil moisture.
    1. Solution, osmosis, and capillarity in relation to soils.
    2. Forms of soil moisture.
    3. Sources, capacity of soils.
    4. Effects on soil.
    5. Function in crop growing, amount needed by crops.
    6. Control.
        - a. Increasing soil water.
            - 1) By decreasing percolation.
            - 2) By decreasing evaporation.
            - 3) By increasing capacity.
            - 4) Irrigation.
        - b. Decreasing soil water.
            - 1) Drainage.
                - a) What it does.
                - b) Where needed.
                - c) Effects.
                - d) Methods.
        - c. Dry farming.
- D. Soil air.
    1. Composition.
    2. Amount, factors determining volume.
    3. Functions.
    4. Control.
- E. Soil humus.
    1. Sources.
    2. Composition.
    3. Amount.
    4. Effects.
    5. Control.
- F. Soil life.
    1. What it is.
    2. Importance of each.
    3. Bacteria.
        - a. General facts.
        - b. Function.
        - c. Putrefaction and decay.
        - d. Nitrification.
        - e. Denitrification.
        - f. Inoculation.
- G. Soil heat.
    1. Sources.
    2. Function.
    3. Conditions affecting temperature.
    4. Effects of freezing and thawing.

- H. Erosion of the soil.
  - 1. Sheet washing.
  - 2. Gullying.
  - 3. Forces of erosion.
  - 4. Methods of control.
- I. Cultivation of the soil.
  - 1. Function of cultivation.
    - a. Effect on physical condition, wet and dry.
    - b. Effect on moistures, air, and heat.
    - c. Effect on soil organisms.
    - d. Effect on plant food and growth.
  - 2. Tools of cultivation.
- II. Soil fertility.
  - A. Plant food elements.
  - B. Relative amounts needed for growth.
  - C. Relative amounts in normal soil.
  - D. Foods likely to become deficient.
  - E. Ways in which plant food is produced, out-cropping, erosion, leaching.
  - F. Sources of elements likely to become deficient.
    - 1. Crop residues.
    - 2. Barnyard manures.
    - 3. Legumes.
    - 4. Humus—its relation to fertility.
    - 5. Commercial fertilizers.
  - G. Sources reviewed:
    - 1. Nitrogen-legumes, air, dried blood, tankage, saltpeter, ammonia sulphate.
    - 2. Phosphorus—raw bone, steam bone, rock phosphate, acid phosphate, phosphate slag.
    - 3. Potassium-Kainit, potassium sulphate and chloride, wood ashes.
  - H. Cost of these elements. How to use in a system of permanent agriculture.
  - I. Complete fertilizers.
    - 1. Composition.
    - 2. Advisability of use in general farming.
    - 3. Advisability of use in intensive farming.
    - 4. Home mixing of fertilizers.
- III. Soil management.
  - A. Crop adaptation.
  - B. Crop rotation, in respect to
    - 1. Physical effects.
    - 2. Plant food.
    - 3. Farm labor.
    - 4. Weeds, insects, plant diseases.
  - C. Use of limestone, phosphorus, legumes, drainage, etc., in systems of permanent soil fertility.
- IV. National Soil Fertility league; its plans and purposes.

"This outline offers a field sufficiently broad to give plenty of material for a semester of recitations. Along with this however there should go another important phase of a course of soils, that dealing with practical exercises. These exercises should have a very close correlation to the text. Their number should be limited by that usage which apportions two double periods a week to that phase of science subjects. In order that there might be some election in the choice of experiments to fit local conditions, it seems to me that more should be indicated than it is expected to have performed. I believe that this body should select a list of prescribed experiments, leaving the remainder as electives. Here are the exercises that seem to have the backing of experts, yet having as I believe the calibre suited to the students under consideration:

Preliminary.

1. A field trip to study the formation of soils and taking soil samples.
2. Soil particles and their separation.
3. Microscopic examination of soil.
4. Observational study of the ten important elements of plant food.

Soil Physics.

5. Types of soil and subsoil.
6. Classification of the soils of the community.
7. Total moisture relation of soils.
8. The capillary moisture of soils.
9. The hygroscopic moisture in soils.
10. The temperature relations of soils, as to slope, tillage, moisture, types.
11. The organic and mineral matter in soils.
12. The specific gravity of soils.
13. The apparent specific gravity of soils.
14. Evaporation from soils.
15. Percolation through soils.
16. Rise of capillary water in soils.
17. Effect of organic matter on the holding capacity of soils.
18. Effect of puddling on soils.
19. Effect of freezing and thawing on soils.
20. Effect of manure on baking soils.
21. A field trip to study sheet and gully washing and their control.
22. Soil drainage demonstrations.

Soil Fertility.

23. Preparation of plant food solutions.
24. Showing the solubility of plant food.
25. Testing the value of plant foods with pot cultures.
26. Testing soils for acidity.
27. Testing soils for alkalinity.
28. Showing how soils may become alkaline.
29. Testing sandy soils for the limiting element nitrogen.
30. Testing swamp soils for potassium.
31. Testing prairie soils for phosphorus.

Soil Management.

32. Noting the effect of inoculating the soil, and the methods.
33. Effect of lime on clay soils.
34. Examination of commercial fertilizers.

35. Outdoor experiments with fertilizers.
36. Observational studies of the structure and advantages of the different farm implements of tillage.

Equipment and supplies for six pupils.

1 Compound microscope.
72 Slides.
1 Box covers, No. 2, round 3-4 in.
6 Magnifying lens.
1 Soil auger.
1 Spade.
36 Soil pans, 4 in. x 3 in. x 11-2in.
36 Mason jars, pints.
36 Flower pots, six inch.
12 Two gallon crocks.
3 Spring balances.
6 Soil sieves, different meshes.
1 Harvard Trip balance.
1 Set weights, 500 g to 1c g.
1 Hand balance with weights.
6 Wash pans.
6 Glass tubes, 3 ft. x 1 inch.
6 Chemical thermometers.
6 Evaporation cylinders.
6 Percolation cylinders.
1 Drying oven.
36 Test tubes.
1 Gasolene burner.
6 Graduates, 100 cc.
6 Graduates, 250 cc.
6 Porcelain crucibles.
6 Meter sticks.
6 Ring stands.
1 Glass tube rack.
6 Glass funnels.
3 Test tube supports.
1 Set capillarity tubes.
1 Bladder or other membrane.
24 Tumblers.
24 Tin pie pans.
1 Rolling pin.
1 Tape line.
1 Shears.
6 Beakers, 350 cc.
6 Foot rules.
6 Alcohol lamps.
1 Book red litmus paper.
1 Book blue litmus paper.
Rubber tubing.
Long bladed knife.
Soil types (from University).
Fertilizer samples.
Filter paper.
Glass tubing, 10 lb.
Wood alcohol.
Nitric acid.
Hydrochloric acid.
Plant food chemicals.
Soil samples from community.
Bacteria (from U. S. Ag. Dept.)

References.

The Soil, F. H. King.
Soils, Burkett.
The Soil of the Farm, Scott & Morton.
Soils, Lyon & Fippinl.
First Principles of Soil Fertility, Vivian.
Soils and Fertilizers, Snyder.
Soils, Fletcher.
Fertilizers, Voorhees.
Soil Fertility and Permanent Agriculture, Hopkins.
Manual of Agriculture, Barto.
Soil Physics Laboratory Guide, Stevenson and Schwab.
Chemistry of the Farm, Warrington.
The Story of the Soil, Hopkins.
The Farm That Won't Wear Out, Hopkins.
Farmers' Bulletins 77, 266, 44, 192, 406, 144, 337, 245, 259, 315, 278, 187.
Illinois Bulletins, 115, 123, 125, 94.

Illinois Circulars 108, 109, 110, 116, 123, 124, 127, 129, 130, 149.
Valuable texts in general agriculture helpful in a course in soils:
A Laboratory Manual of Agriculutre, Call and Schafer .
Practical Agriculture, Wilkinson.
Elements of Agriculture, Warren.
High School Agriculture, Mayne and Hatch.
Productive Farming, Davis.
One Hundred Lessons in Agriculture, Nolan."

The members of the Session dined together at the Y. M. C. A., and discussed informally the problem and progress of secondary agricultural education.

The Section voted to approve the courses outlined in the above papers and to recommend their publication, together with the outlines of the courses in horticulture and farm crops presented at the Conference last year, as the courses for secondary schools proposed by the Agricultural Section of the High School Conference.

Mr. A. C. Norris withdrew as a member of the executive committee, and the section elected Mr. R. R. Snapp as a member of the committee. Mr. S. H. Dadisman, Principal of the Rollo Township High School, was elected president of the Agricultural Section. The committee now stands:

S. H. Dadisman, Rollo, Chairman.
E. B. Collett, DeKalb.
R. R. Snapp, McNabb.
Lorenzo Muckelroy, Carbondale.
A. W. Nolan, Urbana, Secretary.

W. L. Eikenberry, of the University High School, Chicago, was chosen to represnt the Section on the joint committee for consideration of a general science course for high schools.

BIOLOGY SECTION.

The meeting was called to order by the Chairman of the section, Mr. T. W. Galloway about 9:15 A. M. in room 229 of the Natural History Building.

Registration and Announcements:

Business:

An executive committee of three was selected for the 1914 meeting. Two of the members were obtained by lot, eliminating three of the old committee of five. The members selected were: W. W. Whitney of Chicago and Miss Faith McAuley of St. Charles.

The third member of the committee was elected by the members of the section. This was, Mr. G. J. Koons of Murphysboro.

Programme:

Report of the Committee appointed to encourage and guide experiments to determine satisfactory reading and reference books for High School Biology. Principal G. J. Koons, Murphysboro Township High School. Following is an abstract of this report:

> "At the meeting of the Biology Section last year it was agreed to continue the investigation to determine what books are best for reference work and for collateral reading in biology. The investigation has been continued along two lines. First, an atempt has been made to prepare a list of books representing as far as possible the consensus of opinion among biology teachers and authorities as to what books are most helpful for such use. Secondly, some investigations have been made to determine what books are most helpful from the pupils' point of view.
>
> "In order to accomplish the first named purpose circular letters were prepared and sent to a carefully selected list of writers of textbooks and teachers of biology in the high schools, normal schools, colleges and universities in all parts of the United States. The list was selected with the idea in mind of having as many different kinds of schools and school interests represented as possible. The letters contained a list of the books thought to be most widely used and the recipients were requested to underline the ones which in their opinion ought to find a place in every high school library. They were also asked to write in the names of any books that they would recommend that were not included in the printed list. Replies were received from nearly every one to whom a letter was sent. In many cases the replies were accompanied with helpful suggestions and criticisms. The following are the books recommended arranged in the order of their preference as indicated by the replies received. The number after each book denotes the number of persons expressing a preference for that particular book. The botany list is given first.

1. Nature Study and Life. Hodge. 25.
2. Fungous Diseases of Plants. Duggar. 23.
3. Plant Physiology. Duggar. 23.
4. New Manual of Botany. Gray. Seventh edition. 22.
5. The Teaching Botanist. Ganong. 22.
6. Textbook of Botany. Coulter, Barnes and Cowles. 22.
7. Handbook of the Trees of the Northern States and Canada. Hough 22.
8. Cyclopedia of Agriculture. Bailey. 21.
9. Care of Trees. Fernow. 20.
10. Our Native Trees. Keeler. 19.
11. Cyclopedia of American Horticulture. Bailey. 19.
12. Experiments with Plants. Osterhout. 18.
13. Practical Botany. Bergen and Caldwell. 18.
14. Plant Breeding. DeVries. 18.
15. Plants. Coulter. 17.
16. Story of Germ Life. Conn. 17.

17. The Nature and Work of Plants. MacDougal. 17.
18. Bacteria in Relation to Country Life. Lipman. 17.
19. Seed Dispersal. Beal. 16.
20. New Creations in Plant Life. Harwood. 16.
21. Studies of American Fungi. Atkinson. 15.
22. Blossom Hosts and Insect Guests. Gibson. 14.
23. Botany for Schools. Atkinson. 14.
24. Field, Forest and Wayside Flowers. Going. 12.
25. Principles of Botany. Bergen and Davis. 12.
26. Nature's Garden. Doubleday. 11.
27. Among Green Trees. Rogers. 9.
28. Illustrated Flora. Briton and Brown. 7.
29. Plant Life. Barnes. 6.
30. Bacteria, Yeasts and Molds in the Home. Conn. 6.
31. Our Northern Shrubs. Keeler. 4.
32. The Living Plant. Ganong. 4.

The zoology list in the order of the preferences as expressed is as follows:

1. Handbook of the Birds of Eastern North America. Chapman. 24.
2. Textbook of Zoology. Parker and Haswell. 23.
3. Biology and Its Makers. Locy. 22.
4. Manual for Study of Insects. Comstock. 21.
5. Bird Life. Chapman. 21.
6. Nature Study and Life. Hodge. 21.
7. The Housefly. Howard. 20.
8. The Butterfly Book. Holland. 19.
9. Reports on Noxious and Beneficial Insects of Illinois. Forbes. 19.
10. Animal Life. Jordan and Kellog. 18.
11. Birds in Their Relation to Man. Weed and Dearborn. 18.
12. Insect Pests of Farm, Garden, etc. Sanderson. 18.
13. The Moth Book. Holland. 18.
14. American Insects. Kellog. 17.
15. The Cell. Wilson. 16.
16. Manual of Vertebrates. Jordan. 16.
17. The American Natural History. Hornaday. 16.
18. Entomology. Folsom. 16.
19. Applied Biology. Bigelow. 13.
20. Domesticated Animals and Plants. Davenport. 13.
21. Bird Homes. Dugmore. 13.
22. Handbook of Nature Study. Comstock. 13.
23. General Biology. Needham. 13.
24. Introduction to Zoology. Hegner. 12.
25. General Principles of Zoology. Hertwig. 11.
26. Economic Entomology. Smith. 11.
27. Principles of Economic Entomology. Dougherty. 10.
28. The Play of Animals. Groos. 9.
29. Nature's Craftsmen. McCook. 9.
30. Evolution of Animal Life. Jordan and Kellog. 8.
31. African Game Trails. Selous. 8.

"Some investigations were made to determine what books are best from the point of the pupil. Mr. T. W. Galloway carried on an investigation with his pupils at the James Millikin University to determine what books are best adapted for collateral reading in connection with high school work in biology. A full report of his investigation may be found in Vol. XIII No. VIII of School Science and Mathematics.

"An effort has been made in the Murphysboro Township High School to determine from the pupils' point of view just what books are the most helpful to them. The pupil is encouraged to do much reading in connection with the text and laboratory work. Special topics are assigned for reports which require rather a wide use of the library. The best books that we have are kept in the laboratory for consultation in connection with the laboratory work. In the laboratory, however, the reference books may not be used at the laboratory table but must be used at the reference table. The pupil is not required to use these books in connection with his laboratory work but it is explained to him how by their use he will be able to do more and better work. I asked the beginning class to make a list of the books that they have found most helpful in their work. The following are the books reported by them:

1. A Text Book of Zoology. Parker and Haswell.
2. Manual for the Study of Insects. Comstock.
3. Nature Study and Life. Hodge.
4. Applied Biology. Bigelow.
5. General Zoology. Linville and Kelley.
6. Freshwater Aquaria. Bateman.
7. The Butterfly Book. Holland.
8. The Moth Book. Holland.
9. Domesticated Animals. Shaler.
10. Animal Life. Jordan and Kellog.
11. The Insect Book. Howard.
12. Handbook of Nature Study. Comstock.
13. Elementary Lessons in Zoology. Needham.
14. Insects. Sharp.
15. Elementary Biology. Peabody and Hunt.
16. Protozoa. Calkins.
17. General Biology. Needham.
18. Practical Zoology. Parker and Parker.
19. Formation of Vegetable Mould. Darwin.

"The list of books printed in the High School Manual for biology and recommended for high school libraries does not seem to accord with the present day opinion of biologists judging from the results of the present investigations. It might be well for the Biology Section to recommend to the proper authorities that a revision of the list is desirable.

"No list of books can be prepared that will be found to be acceptable to every one. Any list prepared will be only suggestive. Local conditions and the individual opinions of the teacher should finally determine just what books should be added to the science library. It is hoped, however, that a study and discussion of the problem in some cases at least result in a more judicious choice of books for the biology classes."

Discussion:

In the discussion, a speaker recommended that the list of books on page 33 of the "High School Manual" be revised, for in view of Mr. Koon's investigation, the zoology works, at least, are not suitable ones.

Report of a Syllabus for Botany. Dean O. W. Caldwell, University of Chicago. This syllabus, as revised by the Conference, is as follows:

The Syllabus of a Course in Botany.

1. *Previous work of the Committee.*

In the report of the committe on biology of the University of Illinois High School conference in 1911, the purposes of high school biology were outlined. Upon the basis of these purposes there was made a general statement of the content of courses in botany and zoology. In the next year a more detailed syllabus on zoology was presented and the committee was instructed to prepare a syllabus in botany.

The syllabus here presented is intentionally elastic in nature. The committee does not regard it as advisable that strictly uniform courses in botany should be given in all high schools, but thinks that the purposes of the course should be fairly uniform, though these purposes may be realized in different ways.

I. The general purposes of biology in high schools as previously outlined, are:

1) The production and conservation of a vital interest in plants and animals.

2) An appreciation of the human values of plants and animals.

3) The encouragement of the habit of raising and solving problems concering plants and animals.

4) Some ability to use the library, the field, and the laboratory in individual pursuit of these interests.

5) The ability to sustain interests in these problems through considerable periods.

6) A sense of organic response to the environing conditions.

7) A conception of development and of the evolutionary series of plants and animals.

8) Some knowledge of living material; its organization in plants and animals; its properties and the relation of these to the activities of the organism.

9) Some experience in classification of organisms.

10) A conception of the place of man in the biological series along with convictions that this does not invalidate, but rather heightens, the meaning of the higher human qualities.

11) A sane, wholesome appreciation of the origin and meaning of the sex, and its bearing on human life.

II. In addition to the above purposes botany should also be present:

1) The problems of food manufacture by plants, as a basis for understanding the world's food problems—of plants, animals and men. This study of chlorophyll—plants, leads to the food problem of non-chlorophyll—plants, to

animals, and to men. This leads to the study of types of dependency—sapophytism and parasitism. Decay and destruction of organic bodies are associated with the study of dependence.

2) Plant structures and processes are important not only in the life of plants, but also in the industries and vocations. Problems of successful plant life, and of plant productivity, and avoidance of plant diseases, etc., are topics of constant recurrence in agrculture, horticulture and gardening. Food supply, prevention of decay, the bacteria of hygiene, etc., are fundamental to household science. The fiber and timber industries depend upon structures by means of which plants do their work.

III. The following topics and approximate time distribution must be understood as suggestive, since it will often be advisable for the teacher to change the order of topics, omit or add topics, or change the relative time given to topics. No distinction is made in this outline between recitation periods and laboratory periods. It is assumed that a full school year will be given to the whole course, or if but a half year, that part of the topics will be selected for use and less work be given to some of the topics selected. The arabic numbers in parentheses suggest the number of days given to the topic.

Topic 1. *Plants as universal features of the earth's surface. (1 or 2).*

A brief introductory consideration of the place of plants in nature as ordinarily observed, and of the constant daily use of plant materials. Discussion and preparation of lists to show abundance and use of plants.

Topic 2. *The plant as a machine. (2 or 3).*

A general survey of what a common plant is—roots, stem, leaves, flowers and seeds—, and a general idea of the kind of work done by each of these major divisions of a plant. Not a study of details but a unified study which gives perspective and later serves to organize the study of details. Presented by discussion, or by reading a general outline statement.

Topics 3. *Leaves (10 to 14).*

Experimentation upon the relation of leaves to food manufacture; the nature of chlorophyll; transpiration of water from the leaf; structure of leaves; form and position of leaves; relation to lighting; deposit of food in leaves; deciduous and evergreen plants; leaves in bulbs, as tendrils and spines; propagation by leaves.

Topic 4. *Roots (6 to 8).*

Relation of roots to work of plants; roothairs; nature, extent and growth habits of roots; effects upon substratum; nature, direction and extent in wet, dry, and mesophytic regions; effects of different kinds of soils upon roots; symbiosis between roots and fungi, and bacteria; storage of food; annuals, biennials and perennials; uses for men and animals; propagation by roots.

Topic 5. *Stems (10 to 12).*

Relation of stem to chlorophyll work; kinds of stems—upright, prostrate, climbing and underground; structure; food storage; propagation by stems; roots, stems and leaves in relation to formation and holding of soils; stem, fiber and timber industries; a lumber yard; geography of forests; practice of forestry.

Topic 6. *Flowers (6 to 8).*

Relation to life of plant; organ of seed formation; parts and their names; processes of seed formation; pollination defined; variation in floral structure;

acquaintance with a score of common plants by means of flowers, leaves and stems.

Topic 7. *Seeds and Fruits. (4 to 5).*

Collection of seeds and fruits; overproduction shown by calculation upon data collected from local plants; consequent struggle for existence; how seeds are scattered; seed preservation; storage of food in seeds; significance to plants and to man; fruits in relation to seeds; in relation to horticulture and agriculture; important seeds and fruits of different countries; improvement of seeds and fruits.

Topic 8. *Seedlings. (5 to 6).*

Relation to adult plant; phenomena of germination; conditions of germination; vitality of seeds; seed testing; purity of seeds.

Topic 9. *Weeds. (3 or 4).*

Weeds as illustration of struggle for existence; characteristics of successful weeds; acquaintance with a score of common weeds; weeds and crops; relation to reduction of value of seeds and crops; how to eradicate weeds; the ecology of weeds.

Topic 10. *Dependent Plants. (3 or 4).*

Dependency in relation to chlorophyll work; in relation to water supply; dependency for position as in climbing plants; decay of organic substances through action of saprophytes—molds, mushrooms, seed plants; parasitic dependents—tree-destroying fungi, corn smut, apple rust; dependent plants as causes of disease and decay, and importance of decay.

Topic 11. *The Bacteria. (5 to 7).*

Culture experiments showing distribution and growth of common forms; relation to decay and disease; relation to soils; to industries; how disease bacteria are distributed; milk and water supply; one or two common diseases discussed in detail; local health regulations, their rationale and execution.

Topic 12. *Plants and Soils. (4 or 5).*

Different kinds of soils; kinds of plants which grow on different soils; vigor of one species when grown on different soils; water rentention of soils; drainage; erosion of soils; soil replenishment.

Topic 13. *Pollination. (3 or 4).*

Relation to seed formation; kinds of pollination; agencies—air and animals; study of types of common plants and text discussions; relation to breeding problems.

Topic 14. *Plant Breeding. (8 to 10).*

Pollination as basis for practice; problems involved; records of experiments; lines of promising experimentation; methods practiced; individual experiments which may be carried out.

Topic 15. *Important Plant Families. (5 or 6).*

General acquaintance with characteristics and importance of a few leading families; in the monocotyledons—the grasses, lilies and orchids; in the dicotyledons—the tree families, roses, legume, umbellifer, heath, mint, nightshade, and composite; these studied by use of common specimens, text discussions and bulletins showing their significance.

Topic 16. *Regional Distribution of Plants. (4 or 5).*

An ecological consideration; the factors of physiographic distribution; hydrophytes, mesophytes and zerophytes; characteristic structures of plants of each type; acquaintance and interpretation of local situations.

Topic 17. *Algae. (2 to 4).*

General ideas of simple green plants, their nutrition and reproduction; one or two type specimens studied and text and class discussion of three or four types; general exhibition of marine and fresh water algae.

Topic. 18. *Fungi. (8 to 10).*

The fungi already mentioned; mushrooms as types—structure, life habits, effects upon substratum; molds, review bacteria; type parasitic forms studied in detail from material, text and bulletins—as potato blight, grape mildew, wheat rust, etc., these used as basis for individual reports and class discussions. *Lichens* are treated briefly in connection with the fungi; structure and interrelations of two elements; distribution of lichens; effects upon substratum.

Topic 19. *Liverworts and Mosses. (3 or 4).*

General study of form, and habit of one or two thallose liverworts. Structure of a common moss; life cycle; nutrition and reproduction; life habits of mosses.

Topic 20. *Ferns. (5 to 8).*

Structure; life cycle; nutrition and reproduction; acquaintance with ten or twelve common ferns, this secured through field or laboratory study.

Topic 21. *Gymnosperms. (6 or 8).*

Pine as type; general structure of parts; how pine lives; reproduction—relation of flowers to those previously studied; the seed and its significance to the plant; tree as factor in industry; distribution of gymnosperm forests; acquaintance with local representatives.

Topic 22. *Angiosperms. (15 to 20).*

Review previous work; monocotyledons and dicotyledons, studied by types of each; acquaintance with fifty local angiosperm plants through field observation and laboratory study, including enough identification to give method of work.

When a half-year course is presented it is suggested that the following topics be presented by very brief mention and the remaining topics presented in a less extended manner than in a full year course; 10, 12, 16, 17, 18, 19, 20, 21.

The report was accepted, and it was voted that it be considered during the next year, and brought up for final action at the next conference.

Open Discussion Relative to the Future Activity of the Section:

An important suggestion was made by a member and that was, to have an illustrated talk given by someone prominent in the field of biology in addition to the more informal part of the program including papers and discussions principally by members. This met the general approval of the members present.

Adjournment of the morning session about 11:30 *A. M.*

The afternoon meeting was called to order about 2 oclock. Professor Frank Smith presided during the first part of the program.

Program:

Report on the Use made of Illustrative Materials in Biology Courses in the High Schools of Illinois. Professor T. W. Galloway, Millikin University, Decatur. The report was as follows:

I. *Introduction.*

At the last meeting of the Biology Section the Executive Committee decided that the problem of illustrative materials for courses of Biology in High Schools should form a part of the present program. As introductory to this consideration the Chairman of the Committee undertook to collect some data as to the actual conditions in the high schools at the present time.*

Questions were sent out to one hundred schools representing all the principal types of high schools in the state. Only twenty-two answers were received. While this number is entirely too small to enable any but most obvious analysis of the answers to be made, they were varied enough to be reasonably representative of the extreme conditions. The results therefore have no quantitative value: their significance is purely qualitative.

It was hoped furthermore that the list of questions itself might have a certain suggestive value to those to whom they were sent. It is probable that the results here represent a condition above the average, since the poorly equipped school would be less likely to report its condition.

II. *Questions:*

1. Is it your practice to give the Zoology and Botany courses separately or, in combination, as Biology?

2. (a) About what proportion of the whole time do you allot to laboratory work $\begin{cases}\text{Botany?}\\ \text{Zoology?}\end{cases}$

(b) to field work $\begin{cases}\text{Botany?}\\ \text{Zoology?}\end{cases}$

(c) Describe briefly the types of field regions which you find most available for use in illustrating your courses.

3. (a) What arrangement have you for keeping living plants? Living animals? In what ways do you find these practically useful?

(b) What laboratory materials are you able to collect in your locality in sufficient abundance to supply your classes in Botany and Zoology?

(c) What materials do you purchase? From whom the best preserved materials? From whom the best live materials?

4. What wall charts do you use in teaching? Do you purchase or make these? If made,—from first hand material or books? What materials do you use and how do you make them?

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*The collection and digestion of these data were intrusted to Mr. Walter E. Rogers, a student in the department of Biology at Millikin University, who presented a report on the subject as his thesis for the A.B. degree. The present report is a further digest of the material presented by Mr. Rogers.

5. Do you find it practicable to make extended use of figures in reference texts for illustrative purposes? What have you found to be the most advantageous way to secure this reference on the part of students? What texts have you used *effectively* for this purpose? How large are your classes?

6. Do you use museum materials in teaching? Have you specimens fairly illustrative of the more important groups and structures? Where do you lack, chiefly?

7. Is your laboratory supplied with a lantern? How many slides? What is your judgment with regard to the value of the lantern, and of microscopic projection? Do you project entire specimens with the reflectroscope? Photos or figures? Is it effective?

8. (a) How many microscopes has your laboratory? Compound? Dissecting?
   (b) What other special apparatus has your laboratory?
   (c) To what extent do you use the compound microscope, in Zoology? In Botany?
   (d) To what extent do you find ready-made microscopic slides helpful for demonstrative purposes?
   (e) Where have you been able to secure good ones—Zoology? Botany?

9. In each subject enumerate 10 microscopic objects that you regard as most valuable to use as ready-made slide mounts. (a) Zoology; (b) Physiology; (c) Botany.

10. Do you use anatomical models? What; and to what extent?

11. If you could plan your courses exactly in accordance with your best judgment would you use more or less illustrative material than you are now using? Why?

12. If you could devote $100 to extending the equipment of your laboratory for the Botany and Zoology courses how would you distribute it? (a)——— (b)——— (c)———

13. What books have you found specially useful for guidance in collecting, preparing specimens, making charts, or in providing any type of illustrative material.

14. Please make suggestions as to work the committee can do to improve conditions in these particulars.

III. *Answers:*

(Only a portion of the answers is discussed in this report.)

Question 1. Ninety-five percent of the schools reporting are giving separate courses in Botany and Zoology. There seems some disposition perhaps to combine the work in the Township High Schools, where emphasis is put on agriculture.

Question 2. The proportion of time given to laboratory work varies from ⅛ to ¾, with the general practice ranging about 4/7-3/5. The field work ranged from "none at all" and "optional" to 1/6 of the total time. The answers often were 3, 4, or 6 "trips".

In respect to the types of field regions available and actually used for illustration, there is naturally a good deal of variation in both particulars. The localities are not equally favorable, and the disposition or opportunity to make use of them varies. It is not possible to tabulate an answer of this sort but the enumeration of typical places may help the young teacher to find some opportunities where at first he thinks that none exist. "Woods around a shallow pond," "roadsides, pastures, and along streams;" "highlands, plains, many valleys, rivers and swamps;" "vacant lots, home garden, trees of streets;" "greenhouses;" "public park with artificial lake;" "edge of town, small stream, many trees;" "gardens, large parks;" "goological gardens, poultry and other stock shows;" "trip to distant swamp,"—are some of the expressions used.

Question 3. In regard to facilities for keeping living material, answers varied from "no provision at all" to a very fair provision. Indeed there was some range in the estimate of the *value* of such living objects in the laboratory. Two teachers thought they were of little or no value. The great majority, however, gave high place to the interest-arousing function of such materials, and to the incentive furnished through them for the study outside the laboratory of behavior, habits, etc. Flower pots, window boxes, wardian cases, aquarium jars, small green-houses, etc., were suggested for plants. Boxes, wire or other cages, glass jars of various sizes as aquaria, tanks, and incubators are recommended for animals.

While the reports indicate that a good part of the material needed for laboratory work may be found in the locality, nearly all buy considerable live material, and some preserved material from dealers. This purchased material is frequently of organisms to be found in the locality.

Question 4. Only about 20.1 of the reporting schools profess to make any considerable use of wall charts. These reports vary from *"a few on the forms of leaves"* to "several hundred,"—where "we use charts on every possible occasion." Most of those who lack charts express their appreciation and use of blackboard drawings. Only one teacher reported any extensive making of permanent charts within the school.

Question 6. About 40% express themselves without reservation as having museum specimens "illustrating the more important groups and structures." About 30% do not use museum materials in teaching. The remainder have some such material,—but not enough to give any feeling of completeness. Coelenterates, mollusks, and echinoderms are the groups best illustrated in the museums. Many refer to the lack of space sufficient to store and display specimens.

Question 7. Some 50% have a lantern, and slides ranging from 75 to 650. Those who use the lantern hold this of the utmost advantage and value. One teacher cautions against overdoing the use of the lantern. He thinks it is in danger of displacing the inspection of real material and that it should not be allowed to do so. The high percent of schools having lanterns shows us that our answers represent better than average conditions.

Question 8. In the matter of special apparatus, and in the use of it, there is of course great variation. Eight schools have ⅓ compound microscopes, evidently using them in a limited way for demonstration purposes. Twelve report from 6 to 40,—evidently enough to allow a serious use of them. Seven of the twenty-two have microtomes, and baths,—supplemented by clinostals incubator, balances, and other similar facilities,—suggesting some physiological work as well as morphological.

Some of the answers as to the extent of the use of the compound microscope will be suggestive:—"very little;" "for lowest forms;" "lower forms and histology of the higher;" "whenever possible;" "protozoa and two slides for each group;" "only where absolutely necessary;" "⅕ of time approximately;" "½ time;" "⅔ time;" "part of the work in everything."

Considerable difference of opinion exists as to the usefulness of ready made slides. A few think that such slides as can be made in the presence of the student are more real and valuable; but most seem to regard permanent preparations as "very helpful."

Question 10. About one-fifth make some use of anatomical models,—especially in human "physiology." The remainder do not use models at all.

Question 11 and answers:

If you could arrange your courses exactly in accordance with your best judgment, would you use more illustrative material, or less? Why?

More — Fixes ideas firmly.
More — Good illustrations make vivid and lasting impressions.
More — The only way to give correct impressions.
More — Elucidates statements and gives more lasting impression.
More —"Seeing is believing."
More — These subjects should train powers of observation.
More — Seeing and handling helps retention powers of memory. Interest.
More — Makes teaching more efficient.
More — Makes work more vital to students.
More — More illustrations, the clearer the subject. Adds interest.
More — Gives pupils correct notions.
More — Makes teaching easier and a better impression on pupils.
More — Nothing teaches science so well as seeing the object.
More — Interests pupils and fixes facts.
More — City children can't get to the outdoors.
No more — We are well supplied with illustrative material.
No more — Using all necessary now.
More — Gives students more definite ideas of things studied and creates interest.

Question 12 and answers:

If you could devote $100 to extending the equipment of your laboratory for the Botany and Zoology courses, how would you distribute it?

1. (a) One microscope. (b) 3 dissecting microscopes. (c) Vivaria and aquaria. (d) Marine museum materials.
2. (a) Reflectoscope, projectoscope for micro slides. (b) Wardian case and experimental apparatus for botany. (c) Compound miscroscopes. (d) Books.
3. (a) Microscopic slides. (b) Stereopticon.
4. (a) Lantern and slides.
5. (a) Better facilities for live material. (b) Live material. Preserved material. (d) Charts, etc.
6. (a) Lantern. (b) Specimens for zoology. (c) Models. (d) Charts.
7. (a) Large grain sprouter. (b) $50 for lantern slides. (c) $20 microscopic slides. (d) Reference books.
8. (a) Conservatory. (b) Library.
9. (a) Reference books. (b) Compound microscope. (c) Lantern slides.
10. (a) Facilities for keeping living plants and animals. (b) Slides.
11. (a) $50 library. (b) $25 charts, models. (c) $12½ preserved material. (d) $12½ germinating room.
12. (a) $30 living material and facilities for keeping it. (b) Demonstration, museum material and slides. (c) Chart. (d) Books.
13. (a) Botany and zoology. $20 for slides. (b) $30 for dissecting microscope. Zoology. (c) $50 mounted demonstration specimens. Botany. (d) $10 glassware. (e) $40 Physiological apparatus.

14. Museum specimens, microscopic slides, books and models.

15. (a) $25 working apparatus. (b) $25 microscope slides. (c) $25 mounted birds and other vertebrates. (d) $25 models.

16. Books. Wood sections. Charts. Lantern slides, models.

17. (a) Apparatus and glassware, $25. (b) Live materials and incidentals, $25. (c) Books, $10 and demonstration material, $20. (d) Microscopic and lantern material, $20.

Question 14 and answers:

Please make suggestions as to work the committee can do to improve conditions in these particulars.

As yet we do not have the ideal text book either in zoology or botany. Happy medium not reached yet.

Get up a set of slides of all kinds to circulate among schools until school can procure slides of their own. Advise teachers how to make slides and what to mount.

Keep teachers of biology informed as to the best thing that is being done in this work with specific helps and suggestions.

Give a demonstration at the next meeting showing some of the charts, models, etc., any well equipped laboratory should have.

Pressure to reduce size and equalize classes by mandatory regulation of school boards.

Inform us what the others are doing and what they have in the way of equipment.

Print and distribute a book telling where the type plants can be found. Zoology—the need of a periodical, illustrated, similar to Nature Study Review but dealing with high school conditions. Should be seasonal, with department for exchanging notes, etc., similar to various trade journals.

Publish the findings of this investigation.

Discussion of the use of Illustrative materials:

In this, it was recommended that a list of preparators and dealers handling natural history specimens be published in the High School Manual.

It was moved and carried that the Chairman appoint at his convenience a committee of five to consider the papers just presented with the discussion on them and to prepare for consideration next year a synopsis of illustrative material for biology teaching in secondary schools.

It was also moved and carried that it be the sense of this meeting of the Biology section that boards of education should purchase laborative and illustrative material for the use in the high school biology classes in the schools over which they have control.

General Businesss

A motion was made and carried that a representative of the Biology section of the Conference be appointed for the committee of the general conference on a course in general science for high schools.

Mr. J. L. Pricer of Normal was appointed for this representative by the chairman.

The regular chairman, Mr. T. W. Galloway, presided at the business and discussion part of the program just considered.

T. L. Hankinson, Secretary.

CLASSICS SECTION.

The Section was called to order by the chairman, Professor H. J. Barton. He extended a hearty welcome to all visiting teachers both for the University and for the Classical Department. He then explained to the Section the new plan of the General Conference Committee by virtue of which each Section will elect one member each year to serve on its own committee. According to the directions given, lots were drawn with the result that Mr. C. E. Allen and Miss Frances Sabin retired from the committee, and by vote of the Section, Miss Harriet L. Bouldin was elected a member. The new committee of three with the term of service of each is as follows,—

H. V. Canter, chairman, to serve one year;
Mary L. English, secretary, to serve two years;
Harriet L. Bouldin, to serve three years.

The chairman then introduced the first seaker, Miss Frances E. Sabin, Oak Park, Ills., who spoke on the subject,—"An exhibit in answer to the High School Boy's question, 'What is the use of Latin'. As an answer to this question, Miss Sabin called attention to the difficulty of effective appeal to high school students along the lines that reach the more mature. It was necessary to show them something more concrete. To this end she had prepared a series of cards on which was shown in an effective manner the indebtedness of English to Latin and Greek. The exhibit was divided into ten parts and each part contained a large number of cards. It was displayed on the walls of room 202 and in the corridor of the fourth floor of Lincoln Hall. Miss Sabin explained the exhibit in detail. She was followed by Miss Laura Woodruff, Oak Park, who spoke of the method employed in the beginning Latin classes in the Oak Park High School. It was an application of the principle advocated by Miss Sabin. The exhibit aroused great interest.

In time past, the Classics Section held definitely to a policy of having a standing committee to study the best methods of instruction in some particular portion of the high school Latin course. For three years, the work of its committee centered around the work of the first year. Last year, a committee was appointed to study the second year work. This committee consisted of Miss Ellen A. Ford, Charleston, Mrs. Laura R. Frazeur, Chicago, Miss Harriet L. Bouldin, Springfield. It reported through its chairman, Miss Ford, as the second number of the morning program. The work of the committee for the year was outlined as follows:

I. What the teacher of second year Latin should be able to assume as accomplished in the first year.

II. The material of the second year course.

III. Method of presentation.

IV. What the teacher of third year Latin should be able to assume as accomplished by the work of the second year.

The committee found that the teacher of second year Latin should be able to assume that a pupil had thoroughly learned the inflectional system of Latin, the syntax of nouns, pronouns, adjectives and adverbs; that he should readily classify subordinate clauses in English sentences, and should have mastered about twenty-five pages of not too difficult Latin.

The material should be Caesar, in the order determined by the instructor, together with some elementary Latin composition.

The method of presentation was discussed at length and the best method to secure facility in translation.

The teacher of third year Latin had a right to expect that pupils from the second year should recognize forms with ease, use the grammar as a book of reference, find their way intelligently through narrative prose, and apply the principles of Latin syntax to the translation of sentences based on Caesar.

At the session of the Section in 1912, it was determined to conduct an experiment with the purpose of securing greater facility in translation. The experiment was placed in the hands of Miss Mary L. English of the Decatur High School. At this point, as the third number of the morning's program, she presented the result of her experiment. Her work was based upon suggestions made in a paper read before the Classics Section in 1912 by Professor C. E. Allen of Carbondale. Miss English reported that the experiment was tried with a class of twenty-five students, at the beginning of their second year work. "Since February, the class had read all of Fabulae Faciles, twelve of Aesops fables, three of the Fabulae in the Decem Fabulae belonging to the Lingua Latina series, the lives of Caesar, Pompey, and Cicero from Viri Romae, twenty chapters of book 1.

and all of books II. and III. of the Gallic War. They are now reading book IV. and expect to read something more, possibly the siege of Alesia. They have done no work in composition and only enough in morphology and syntax to enable them to translate the work in hand.

A test made to determine whether this class had gained in knowledge of syntax showed that no gain had been made. Other tests showed that increased ability in translation was being developed though not at an unusual rate."

Summarizing, Miss English reported that the plan had seemed good because of the varied reading offered and the greater human interest in the content, but weak in that there was not sufficint progress in knowledge of syntax to insure sound and vigorous habits in translation.

The two reports were received and a general discussion followed.

The Section then adjourned to two o'clock P. M.

The Section was called to order at two o'clock P. M. by the presiding officer, Professor W. A. Oldfather. He introduced the speaker of the afternoon, Professor D. D. Hains, of Wabash College, Crawfordsville, Ind., who spoke on the "Presentation of Classical Plays." His address was illustrated by a large number of slides. He traced the presentation of classical plays from the Oedipus Tyrrannus at Harvard in 1881, to the presnt time. He also gave directions as to costumes and estimates of cost of production. His address was a clear and well arranged statement from the historical side, supplemented with the necessary information for teachers interested in staging the plays.

The Section then adjourned.

Mary L. English,
Secretary.

Following are abstracts of the papers given:

An Exhibit in Answer to the High-School Boys' Question "What is the Use of Latin."

Miss Frances E. Sabin.

"In these days of confusion as to the real ends of education, and contention as to the meaning of terms employed in defining them, one fact at least is clear and beyond any question of dispute, namely, that the modern world is insisting upon a definite answer from educators as to the value of various studies now in the curriculum of schools and colleges. It is asking from teachers in clear and unmistakable terms such questions as these, 'Of what use is your subject?' 'What is its bearing upon the affairs of practical life?' And however foolish the questions may seem and despite the difficulties of answering them in terms of the 'practical'—a word that has as many meanings as there are ideals of life—every teacher must be ready to respond.

"The supporters of vocational studies looking directly to commercial ends have long had their answer ready, and in a form so striking and concrete that the modern world has no difficulty in understanding it. For various reasons, also, teachers of the sciences, history, English, mathematics, and modern languages have had comparatively little difficulty in convincing the world that their subjects are useful. But the task has been harder for the teacher of the classics, not because he had a less 'useful' contribution to make to the cause of education, but because it lent itself less readily to definition in terms which the man in the street would regard as in any sense 'practical.' And so in many cases he has not answered it at all, preferring rather to take the attitude of the pagan worshipers at Ephesus who met the claims of the new religion by gathering around the statue of their goddess and shouting in the ears of the Christians, 'Great is Diana of the Ephesians!' without stopping to answer the question, 'Just *how* is she great?' 'What can she really do for those who follow her?'

"The writer has felt for a long time that failure to give a direct answer in a striking and concrete form to this question, 'Is there any relation between the study of Latin and practical life?' or as the high-school boy puts it, 'What's the use of Latin anyway?' has been at the basis of much of the discontent concerning Latin. The Exhibit as outlined in this paper was begun as a pedagogical experiment to prove or disprove this theory. It took the present form because of the assumption that a few concrete illustrations arranged in a way to strike the eye are better than any number of abstract statements.

"Briefly summarized the plan of the Exhibit which is now in published form for the use of classical teachers is as follows:

"Clear and concrete illustrating in the way of photographs, charts, drawings, newspaper and magazine clippings, etc., are arranged upon cards under nine main headings—all showing the practical value of the study of Latin and its very close connection with the affairs of life. This illustrative matter is displayed upon the school room walls where it cannot fail to attract the eye of the student and arouse his intelligent interest, because it forms an answer which he can understand to his questionings. He is the more interested if he has helped to collect and prepare the material under the teacher's guidance. The results of the use of such a device have proved most satisfactory and have demonstrated clearly that it is quite possible to convert a fair share of high school pupils to the side of Latin."

Report of the Committee on Second Year Latin.

The committee submits the following report: Last year the Classic Section of the High School Conference considered the topic, Second Year Latin, and appointed a committee to report this year on the same subject. The committee outlined its work as follows:

I. a. What should the teacher of second year Latin be able to assume as accomplished in the first year?

b. Can he make good the deficiency if this work has not been well done?

II. The material of the second year course.

III. Method of presentation.

IV. What should the teacher of third year Latin be able to assume as accomplished by the work of the second year?

The teacher of second year Latin should be able to assume that the pupil has learned the inflectional system of the Latin language and understands quite thoroughly the syntax of nouns, pronouns, adjectives, adverbs; that he can readily classify subordinate clauses in English sentences and has applied this knowledge of forms and syntax to the mastery of about twenty-five pages of not too easy Latin. The systematic study of the uses of the subjunctive belongs to the second year, but every subordinate clause in the Latin of the first year should be classified as a preparation for this study.

The pupil who goes into Caesar with less than this preparation invites failure. If through absence, laziness, or dullness, he has failed to make the work of the first year a safe foundation for that of the second, he should repeat the first year or drop out of Latin into some other course. There is no Latin salvation for the irregular, the lazy, or the dull. That kingdom is closed to them no matter how hard the anxious teacher may strive to carry them in.

II. The material of second year Latin should be Caesar—either the first four books complete or selections from the seven books; the intelligent and systematic use of the grammar as a book of reference; and some elementary Latin composition.

The Commission on College Entrance Requirements recommends for the second year: Caesar-Gallic War, books I and II; sight reading equivalent in amount to books III and IV of the Gallic War to be selected from Caesar (Gallic War and Civil War) and Nepos (Lives).

The Syllabus for Secondary Schools in the State of New York (1910) requires Caesar-Gallic War, books I and II; sight reading equivalent to books III and IV; elementary composition.

The Course of Study for the Latin Schools in the City of Boston (1911) requires six years of Latin in preparation for college. The work of the third year is as follows:

Caesar, Books I-IV of the Gallic War.

Ovid, 500 lines.

Unprepared translation of passages from Caesar, Nepos and Ovid.

The Committee on Syllabus of the Latin Section of the Chicago Teachers (1913) recommends:

Latin equivalent to four books of Caesar, either exclusively Caesar, or exclusively from the second year supplementary list or partly one and partly the other. The supplementary list includes Ritchie's Fabulae Faciles, Nuting's First Readings, Heatley and Kingdon's Gradatim, Robert's Caesar, book I, Collar's Caesar's Civil War, book 3, Peck's Ovid, books 1 and 2, Nepos, Viri Romae.

III. Inflection, vocabulary and syntax should not be considered mainly as ends in themselves, but as tools for unlocking the meaning bound up in the Latin sentence. The analysis of thought relations within the sentence is very complete in Latin grammar. Much of the technical Latin grammar which we require in our secondary schools is of little help in the translation of Latin into English; it is necessary for the reverse process of translating English into Latin. The mastery and application of it ranks with mathematics as a disciplinary study and a wiser age will probably require it only of those who wish to become students of Latin grammar, a study well worth while for those who are fitted for it. One illustration will suffice to show the kind of simplification the committee has in mind: *Cum* means *when, since,* or *although.* It is regularly followed by the subjunctive except when the clause explains a time word or phrase or denotes the time of a present or future act. This is adequate for purposes of translation for a high school pupil.

Since the difficulty in seeing case relations or clause relations is a difficulty in seeing thought relations and not a difficulty belonging peculiarly to Latin, these relations may be taught by the use of a few pages of English, thus keeping for Latin only those difficulties which belong to it as Latin. The real thinking is done in recognizing the relation. The pupil's ability to give the Latin name of the construction depends solely upon the thoroughness with which he has memorized the rules and so knows the possibilities for that relation.

Equipped with a vocabulary of about five hundred words, a thorough knowledge of inflection, especially of verb forms, and an understanding of the Latin way of expressing various thought relations, the pupil applies himself to the work of translation by one of two methods. The first is the word by word method, often called the Hale method. This has been almost universally taught for twenty-five years and still pupils graduating from the high school and even from college after four to eight years of experience with it cannot translate as readily as we think they should, always excepting the talented few whom method can perhaps retard but cannot seriously harm. Holding in suspense the possibilities of construction or case of words in the order in which they come is not understanding the meaning in order as the Romans did. Even if it were, we are not Romans and our language experience is quite different from theirs. They were ear and tongue minded; we are eyeminded. With them there was little reading from a book; they listened to a reader. We see six or seven words ahead and this usually includes a full breath group, an idea group, a thought unit. Neither in Latin nor in English, either spoken or written, is the word the unit. Yet some teachers still use the Hale card device—a slit in a card so that the pupil can see but a word at a time and must conjure up all its possibilities before he goes on to the next word. We get ideas much more rapidly through the eyes than we utter them through the tongue or receive them through the ear. It is reasonable to suppose that the Romans had quicker ear and tongue perceptions and memories than we have. Language was not constructed by putting letters together to make words, then words together to make sentences. The sentence is the true language unit. Our fashion of printing words separately has made us conscious of the word. It was not until the eleventh century that a perfect system of separating written words was established in Latin manuscripts and the breaking of the sentence by punctuation marks came still later. In oral language such as Latin, the natural division was the breath group and within this there is no pause. A sentence read as a succession of words sounds very different from a sentence. The only division made in language that is conveying thought is into breath groups.

The second plan of translation then is this: Move forward in order with the translation as far as you can with good English sense, then reach forward to the first verb form that is not tied up in a subordinate clause, then move backward by units of thought to where you started; then reach forward again to the next verb. A unit of thought is a word or group of words forming a logical element in the sentence. It may be a noun with its limiting genitive, a prepositional phrase, an infinitive with its subject accusative. A succession of coordinate elements may be taken as one unit. Never look up a word till it is needed in translating the unit of thought to which it belongs. In every stage in this process, the student has a correct translation in the order of English, and always knows to just what word or group of words he should next direct his attention.

The committee does not agree as to which of these methods we should present to the second year pupil.

Latin composition should have about one-sixth of the time, preferably in continuous periods of not less than one week each. One member of the committee questions the advisability of teaching Latin composition except in special classes to those who are going to college.

While the wealth of interest possible in Latin is an important asset, it is at the same time a grave danger. In any year's work in Latin, a teacher can keep a class deeply interested and yet have them making little progress in the serious study of the language. He can make them declare Latin their favorite study. They may present a Latin version of the three bears to their admiring schoolmates; participate in class contests in vocabulary and inflection, enjoy beautiful pictures of the Roman world, build and draw Caesar's bridge, parade in the armor of the Roman soldier, or the dress of the Roman citizen; and yet they may have acquired very little of what can rightly be called Latin.

The legitimate interest is based on the joy of conquest, the ability to do today what he could not do yesterday; it being our place to see that the task we set is worth while and possible.

Admirable suggestions as to books of reference are found in the Classical Weekly, Vol. VI. No. 9 in a short article by Professor Knapp. There is a further reference to the same subject on the third page of the same number of this paper.

IV. The teacher of third year Latin has a right to expect that pupils who have successfully completed the work of the second year can recognize forms with ease and accuracy; that they can use the grammar as a book of reference; that they can find their way intelligently through narrative prose such as Caesar's Gallic War; that they can apply the principles of Latin syntax to the translation of sen-ences based on Caesar.

Respectfully submitted,
Ellen A. Ford,
Eastern Illinois State Normal School,
Charleston.
Laurie R. Frazeur,
Nicholas Senn High School,
Chicago.
Harriet L. Bouldin,
Springfield, Ill., High School.

An Experiment in the Decatur High School Looking to Increased Ability in Translating Latin.

Mary L. English, Decatur.

"A paper entitled 'A Proposed Experiment in Second Year Latin' was read efore this conference last year by Professor C. E. Allen of the Southern Normal. An outline of the experiment is contained in the following paragraphs which I quote from his paper:

"'The way to learn to translate Latin is to translate it, and my proposition is to translate a much larger amount than that prescribed by the Commission on College Entrance Requirements in Latin.

"I wish that some of the teachers in this conference would take their second year classes and have them read Latin, giving them no prose composition, no systematic work in grammar, no collateral reading on the Roman army, history or private life, but just the reading of a large amount of Latin-Fabulae Faciles, Viri Romae, Eutropius, Nepos, Livy, Caesar— any or all of these, and then see how they are fitted to read Cicero and to do the work usually required in the third year.

"This plan does not preclude giving instructions in syntax, but it does mean that such instruction should be given only when necessary for getting the meaning of the Latin text.

"I venture to suggest the following course of reading:

1. Ritchie's Fabulae Faciles (complete).
2. Viri Romae (lives of Caesar, Cicero, Pompey and Augustus).
3. Nepos—(At least as much in amount as the first four books of the Gallic War and as much more as possible).
4. Caesar.

"This suggested course would place the easier text of Fabulae Faciles and Viri Romae in the first part of the year and the more difficult Nepos and Caesar in the latter part. The reading of easy connected Latin for a few weeks at the beginning of the year should give the pupil a sense of mastery, which is needed at this point in his course.

"The reading of a large amount of Latin should develop ability to read at sight and should increase the power to read Latin repidly—power not acquired by our present methods. And may we not hope that this proposed experiment, if successfully performed, will change such conditions as were reported by Mr. Scott in the School Review for October, 1911, from one High School?

214 pupils enrolled in Caesar classes.
16 pupils enrolled in Virgil classes.'

"The committee in charge of this program made a heroic effort to enlist schools to try the experiment with Latin classes beginning second year work last February. Of all solicited only one found it expedient to try to do the work as outlined. Mr. Allen himself, who should have been the most enthusiastic and successful in making the test, found at the last moment that it was impossible to try the plan in his school. For the sake of the conference it is much to be regretted that a report can be given from only one class. Observations made under five or six different teachers in different schools would have been far more valuable than those here presented.

"The class with which the experiment is being tried began its second year of Latin in February. It consists of twenty-five students. None of these failed in the semester closing in June and there were no withdrawals. So far this semester there have been no withdrawals and only one is failing. In June seven of the twenty-five showed a higher average grade than at the close of the semester preceding. These facts are given because they seem to indicate that the course has enlisted the interest of the students and has prompted them to do a higher grade of work than in the preceding semester. The hopes which Mr. Allen expressed for a larger enrollment in advanced Latin are not to be fulfilled as a smaller number than usual expect to continue in Latin beyond the second year.

"Since February the class has read all of Fabulae Faciles, about a dozen of Aesop's fables, three of the Fabulae in the Decem Fabulae belonging to the Lingua Latin series, the lives of Caesar, Pompey and Cicero from Viri Romae, twenty-nine chapters from Book I and all of Books II and III of the Gallic War. They are now reading Book IV and expect to read something more, possibly the siege of Alesia from Book VII. They have done no work in composition, and only enough in morphology and syntax to enable them to translate the work in hand.

"A few tests have been made with a view to comparing the ability of this rapid-reading division with others taught the same length of time, but by the ordinary methods. They were also compared with divisions a semester above and a semester below. For convenience we shall speak of the groups by their semester names; the 4's are the group now in fourth semester Latin (this is the rapid-reading group), the 3's in the third semester, and the 5's in first semester of Cicero. An effort was made to select for purposes of comparison groups that had spent their time in Latin under conditions nearly identical. It would be manifestly unfair to compare the experimental group with another division previously trained under different conditions, or with a group ranking much above or much below them in ability. Therefore four test-groups were chosen, each consisting of twelve students. Three of these groups have had the same instructor for two semesters preceding this, none are repeating or have repeated the course in Latin 3, and each contains two A students, two A—'s, five B's, one B—, and three C'c. The group of 5's has not been under the same instructor and their average grade in regular work is five per cent higher than the other groups.

"One set of tests was made to find whether students in the group which had not devoted any time to composition work, are losing grip on morphology and the simplest matters of syntax. The tests were of the usual type calling for identification of forms, declension, et cetera, from passages recently translated in class. In these the 4's (the rapid-reading group) made *twice* as many errors as the 5's, but only *two-thirds* as many as the 3's. In answering questions on syntax, simple questions involving the recognition of the direct and indirect object, ablative absolute, and the like, the 4's made *eight times* as many errors as the 5's, and *one and a half times* as many as the 3's. On Monday of this week the 4's prepared the first prose exercise they have written since beginning second year work. On comparing the corrected exercises from the 3's and 4's it was found that the number of errors was the same in both classes. It is clear from these tests that there has been no gain in knowledge of syntax.

"Various attempts have been made to test power in translation. At the end of the twenty-sixth week of rapid reading, the results obtained from an exercise in translating a passage of Eutropius at sight were compared with the same exercise done by second year students trained in the usual way. The differences were negligible. Sight translation from Book VII, B. G., and new translation from the same book, prepared by using vocabulary and grammar was tested in all the groups by means of twenty-five minute exercises in class. The 3's with their twelve weeks' experience in second year Latin accomplished very little in either exercise. The 4's did something worth while in both exercises, but they were far outstripped by the 5's. On the whole, the tests showed that the group with which we have been experimenting is growing, though not at an unusual rate. If extraordinary ability in translation were being developed we might have expected the papers to show the 4's and 5's rather close together in the amount accomplished in a given time. In all the tests, however, the differences between these two groups are pronounced and wide.

"Turning aside now from the discussion of students' ability, I should like to mention a few effects which the experiment has had upon the material equipment of the Latin department in our school and upon our program in general. In February the board supplied us with twenty-five copies each of Fabulae Faciles and Viri Romae. These books have been used not only in the class undergoing special treatment, but also in other divisions in need of supplementary or sight reading. This has suggested the plan of adding new sets from year to year by using our share of the library fund for this purpose. This year we shall add a set of Selections from Ovid, and later Decem Fabulae from the Lingua Latina series, the simplified Phormio, and other books suitable for high school reading. With these in the Latin library the teacher who finds a class wearying of Caesar or Cicero has immediate relief at hand.

"The experiment has, then, in a way affected our whole program. The instructor who has been piloting the students through the course suggested by Mr. Allen has become enthusiastic over the program of varied reading, so enthusiastic that the classes which began second year work in September will read other authors in addition to Caesar, though possibly not so great an amount as Mr. Allen urged. Our new classes will, however, use a composition book, because the work in composition makes the student a keener observer of the construction of sentences which he has to translate, thus increasing his translating power; and also because the principal good derived from the two years' Latin course which most students pursue is training in the science of language. This training cannot be given adequately if the whole time of the class is devoted to translation from Latin to English.

"Summarizing observations, we find that the plan has seemed good because of the varied reading offered and the greater human interest in the content, but weak in that there was not sufficient progress in knowledge of syntax to insure sound and vigorous habits in translating."

The Presentation of Classical Plays—Illustrated,

by Daniel D. Hains, Wabash College.

The purpose of this paper was to interest the teachers of classics in Illinois in the production of Classical plays and of Greek plays especially. For three decades the presentation of Greek and Latin plays and dramatization has been one of the great factors in the effort to show the value of the "humanities" in the educational scheme. It has served to arouse interest in a greater number of institutions than is usually suposed. 298 performances of Greek and Latin plays or selections have been staged at 128 institutions.

The paper took up a number of representative performances.

The first was the Oedipus Tyrannos at Harvard in 1881, the first reproduction of a Greek play in America. It was a remarkable success in every way as was the rendition of the Agaememnon in the stadium at Harvard in 1906. Beloit College, Wisconsin, has given more performances than any other institution, twenty-two. The idea of presentation in English was also originated at Beloit, an improvement in many ways as the effect on the audience of a production in the Greek is more spectacular than dramatic; the plays in English have stirred the emotions of the spectator as deeply as the tragedies of Shakespeare or the work of the latest dramatist of the twentieth century. The plays at Leland Stanford Junior University, at the University of California, at the American Academy of Dramatic Arts, New York, at the University of Pennsylvania, at Washington University, at Smith College, and at Randolph-Macon College for Women were also reviewed. Considerable attention was given to the plays at secondary schools, particularly at Gloversville, New York, High School in 1896, at the Schenectady high school in 1910, and at the West High School, Rochester, New York, in 1913.

Mention was made of a few Latin plays, those at St. Lawrence University, New York, and at the University of Michigan, both in 1882, the Phormio at Harvard in 1894, the four plays at Smith and the Phormio at the Glendale Union High School, California. In comparing the values of Greek and Latin plays for high school uses, the greater emotional and dramatic possibilities of the Greek were pointed out. The last half of the paper was a discussion of the poetical side of the question. The subjects taken up were the choosing and training of the cast, rehearsals which must continue long enough to make the actor feel his part; a mere mechanical rendition is not sufficient to produce the effects of which Greek tragedy is capable even at the hands of student actors, and such a rendition is the only one possible where it is necessary to make an effort to recall the lines. The question of costumes and scenery were also discussed at length.

COMMERCIAL SECTION.

The business meeting of the commercial department opened at 9 A. M., Dr. C. M. Thompson of University of Illinois, presiding.

It was moved and seconded that the permanent committee be composed of three members, one member to be elected each year. The motion was carried. The then permanent committee of five members was disposed of in the following manner: Five slips of paper were prepared on one of which was written "two years" and on another "one year," the remaining three being left blank. The drawing resulted as follows: Mr. Boyer of Chicago Heights was retained for one year; Miss Van Der Veen of Joliet was retained for two years; Miss Pryor of Bloomington was elected as a member of the Committee for three years.

The business meeting was adjourned.

The regular meeting was opened, Dean Kinley presiding.

It was moved and carried that the secretary pro tem act as secretary of the regular meeting.

The report of the Committee on Commercial Courses for high schools was submitted by Principal T. H. Zeigler, of Riverside, the chairman of the committee. This report follows:

A Four Years' Course in Commercial Subjects for Illinois High Schools.

"A year ago this Section appointed a committee consisting of Mr. J. A. Ford, DeKalb Township High School, Mr. H. L. Karns, Pana Township High School, and Principal T. H. Ziegler, Riverside, a committee to report a commercial curriculum covering four years of high school work.

"At the outset may I remark that your committee have practically agreed upon the following points:

1. That such a curriculum should be broad and liberal, giving to one who pursues it definite and rigid training and equipment for business life.
2. That the cultural side of such a high school curriculum should not be neglected.
3. The individual who takes this curriculum should not find himself educated out of the society in which he will live.
4. That certain fundamentals should in the main be required, giving at the same time several elective subjects in each year's work.
5. That whatever curriculum might be suggested there would naturally be some things not suited to the specific community needs of any high school, but that adjustments must be made.

"At this point it is pertinent to state that a curriculum such as we here attempt to outline should be weighed by two standards: First—will it equip the boy or girl who pursues it to the end to better perform his part in the social and economic life in which he finds himself so that he will be a helpful member of the state? and, second—will it equip him for business life? Another consideration should be mentioned. Not infrequently it occurs that a pupil beginning the commercial courses finds after a year or two that he wishes to enter college. Therefore, until the colleges and universities will give us credit for all commercial subjects we must attempt, at least, to carry water upon both shoulders and not stray too far from their requirements, at least in the first two years.

"An examination of the course as submitted by your committee may well engage our attention at this point:

Tentative Schedule of Studies,
High School Commercial Course.

First Year.

English and Composition.	English and Business.
Penmanship and Spelling.	Penmanship and Spelling.
Commercial Arithmetic.	Commercial Arithmetic.
(Select one)	(Select one)
Physiography	Physiography
Physiology one-half year.	Physiology one-half year.
Algebra.	Algebra.
Drawing.	Drawing.

Second Year.

English and Business Forms.	English and Letter Writing.
Penmanship and Spelling.	Penmanship and Spelling.
(Select two)	(Select two)
Elementary Bookkeeping.	Advanced Bookkeeping.
Commercial Geography.	Commercial Geography.
Am. History and Civics.	Am. History and Civics.

Third Year.

English.	English.
Salesmanship.	Salesmanship and Advertising.
(Select two)	(Select two)
Chemistry.	Chemistry.
Modern Language.	Modern Language.
History, Commercial.	History, Industrial.
Stenography and Typewriting.	Stenography and Typewriting.
Advanced Bookkeeping.	Advanced Bookkeeping.
Economics.	

Fourth Year.

English.	English.
(Select three)	(Select three)
Accounting and Practice.	Cash Account. and Buying.
Stenography and Typewriting.	Stenography and Typewriting.
Office Training.	Commercial Law.
Physics.	Business Organization.
	Physics.

"The general plan of the curriculum is to give in each year one or more subjects which your committee thought more important in a commercial training and then a further list of subjects from which selection might be made. As to the individaul subjects in the curriculum as offered,—in the first year Physiology may be taken for one-half year, either semester.

"In general the term 'English' appears. The intention here is to leave the matter of indicaing the nature and scope of the course for that particular year with the administration of the high school giving the work. This is done for several reasons, mainly, however, to make it as flexible as possible and in this way to give some literature, composition, or have the work take a commercial turn. Quite the same may be said of 'History.' In this connection commercial and industrial history with a view to presenting a continued account of the development of commerce and industry. These subjects will likewise have their broadening and cultural value in the general information and broader intelligence they promote.

"Modern Language is placed in the third year, but there is no reason why it should not be given in the second year, thus giving an opportunity for three years of language. In justification of this permit me to call attention to the fact, that a knowledge of Spanish, for instance, will in the not distant future, be a valuable asset in the business world. With the increased trade with Central and South American States which is certain to follow the opening of the Panama Canal commercial interests will require men with a knowledge of this language among their employees.

"The question of whether or not to give physiography if commercial is given. One year or one-half year to commercial geography. Elementary bookkeeping in second year to be followed by more. Opportunity at this point for stenography and typewriting course—rather than a course in bookkeeping. American History and Civics in second year—might readily be placed later in the program. Value and need of course in history and civics in the development of citizenship. This is of first importance—schools to turn out good citizens. Pertinent to many industrial problems. Importance of economics, pertinent also to many industrial problems pressing for solution now and in the near future.

"In this connection a college freshman's experience with purely cultural vs. more general preparation. Fourth year generally more of close application to business—preparing for taking office positions. Your committee feel that in presenting this course something may be said with reference to a two year course. In general this suggestion: In small high schools this full curriculum cannot be given; the more purely and essentially commercial subjects may be given.

The discussion was opened by Principal William Wallis of Bloomington. The following points were emphasized:

1. Miserable teaching is largely responsible for some of our commercial product.

2. Much of the criticism of commercial courses from business men is deserved. All employees cannot be successful any more than all employers.

3. The success or failure of a pupil cannot be measured altogether by the work the pupil does in school.

4. Vocational training has taken an important place in pedagogical discussion contrary to statements of "commercial colleges."

5. The statement in "the Budget," a commercial paper, that the regular high school English courses are not practical from a commercial standpoint cannot be taken as reliable. A good vocabulary in general reporting, for instance, is necessary and there is no better place to get it than in the regular English classes. If so called "Business English" is needed a special course might be added.

6. Shorthand properly taught will afford as much mental discipline as algebra. Typewriting should be treated as a laboratory course, and should be given double periods.

7. Modern language could well be governed by local conditions. Algebra and geometry might be substituted for modern language.

8. One semester is sufficient for commercial geography if it is taught exclusively from any of the texts now offered on the subject.

9. Commercial arithmetic might be either a semester's or a year's course—depending on conditions in the school.

10. Although a two years' commercial course is in a way, unsatisfactory, we owe it to the community to offer it. Such a course would include English and all those subjects truly commercial.

The meeting was then open to general discussion.

Miss Wolf, of Paris, expressed her approval of the discussion with the exception of the two years' course.

Miss Pryor, of Bloomington, prefers a two years' course, even though a sort of a makeshift, to the so-called "Business College" course of six months which the student would otherwise be likely to take.

Mr. Frohardt, of Granite City, added that a student enrolled in the two years' course could change to that of four years, and finish it successfully, although review practice in bookkeeping, typewriting and shorthand might be necessary.

Miss Van Der Veen, of Joliet, suggested that special adjustments might be made for short term pupils. In this case there would be no need of offering a two year course.

Mr. D. C. Hilling, of Peoria, was called upon to preside. Dean Kinley made the following remarks:

The fact that the discussion had taken such a general turn, he said, was significant. We don't as yet know just what we want. The business men through their letters and their attitude have shown themselves uncertain as to what they want. While we should keep in connection with the business men we should not be depressed by their criticisms. He has no sympathy with the modern notion of "business English." English is a matter of judgment in application. Culture is not general,—it must be specific. The teacher has much more to do with culture than the subject. We should teach our bookkeeping as if we were building up a "philosophy of life" upon it. The two year course should be built around technic, the four year course around the principles of industrial and economic organization. Economics therefore should be included in the four year course in the second year. Since accountancy is merely a statistical method of tabulating financial organization, the student should be acquainted with the principles of organization before learning the method of tabulation. In regard to salesmanship—the dean hasn't been able to find a competent teacher of this branch.

Afternoon Session.

The meeting was called to order by Dean Kinley. Mr. Ziegler was called upon to preside in the place of the dean.

Mr. Hilling, of Peoria, read a paper on the organization of shorthand and typewriting with the view of receiving college credit. Following is the substance of this paper:

"A proposed basis for granting University entrance credit for high school work done in Stenography and Typewriting.

I. What is the goal?
II. What shall be the preparation?
III. What shall be the instruction?
IV. What shall be the course?

The small boy can propound questions which baffle wise and learned men. The above questions arose easily and naturally, but it is with fear and trembling that I attempt their solution. That we need a basis for standardization, there is no doubt. We have all labored as best we may to solve this problem along the lines of local conditions and standards. In every community there has arisen, during the last decade, a great demand for trained office assistants, and private secretaries of a type such as the business colleges did not and could not supply. The product of these institutions lacked an educational foundation which made of their students mere automatons.

"Again the public demanded that the boys and girls should receive such training as they needed for this service at the expense of the state. Our high schools were preparing them for college, but not for actual service. The modern business man had no time to take the high school graduate and train him for his particular needs. He must have ready made assistants, who could think and act—who had some initiative and business sense. Hence the school men and school authorities sought to supply this demand through our commercial curriculums in high schools. Like all innovations, there were no standards, and no trained specialists to take up this great work. Undaunted, however, the school men have studied and labored strenuously to meet the demands and each one has endeavored to shape this cirriculum so that the local conditions might be subserved. The development has been marvelous and our standards have been of such a character that four of the commercial subjects, have been accredited and the units defined. And now we are knocking at the University door desiring a standard for admission for work done in shorthand and typewriting.

The Aim

"Shall the aim be merely to gain that degree of efficiency to pass the required grades for graduation from high school, and for matriculation in the University? Or, shall these boys and girls be capable of making their high school training a means to an end for advancing their education, or entering the *active field* of *service* as a *vocation?* Are they to be trained as mere machines who can perform only certain well regulated routine service? Or, are they to be wide awake, resourceful and efficient—the product of a well balanced curriculum?

The Preparation

"There has been a prevailing opinion among parents and their children that the Commercial curriculum was an *easy way out.* To it have flocked the drones, would-be's, and flunks of other curricula. The terms shorthand—typewriting, bookkeeping, etc., seem to be alluring, and visions of a primrose path to success and affluence flit before them. To all such, the Commercial curriculum of the proper type has proven a delusion and a snare. The technicalities of accounting and intricacies of shorthand prove their undoing.

"No student should be admitted to the Commercial curriculum who is unskilled in elimentary training and not willing to continue a study of language and kindred subjects or gain that keen perception and broader view derived from the study of literature, history and science. Shorthand and typewriting are not sufficient unto themselves. Are they not rather a means of a more rapid and skillful expression and communication, supplemented and supported by a thorough academic training—a means born of the necessity of a more advanced and progressive civilization? It is not possible for the shorthand vocabulary to be greater than the language. A lack of preparation in orthography, grammar and rhetoric will handicap any great progress.

"It has been advocated that 'no great skill is required to run a typewriter'—quoting the vernacular. Yes, we have observed those who 'run' a machine with one finger and a thumb—picking out, laboriously, the characters and stopping to read every line to see if it is correct. Must the typist be bound to his machine as a galley slave—eyes upon the key board, slowly thinking out the manipulation—a monodigit operator? Or, shall his training be such that his machine becomes a part of himself—the manipulation automatic, the key board as familiar to him as the key board on a piano is to the musician—whose mind is as free to dwell upon the expression and composition as the accomplished musician sits oblivious to the instrument and revels in the theme and rythm of his music?

The Instruction

"Here too we have a problem—a problem of vital importance. It is well enough to outline a course and set up standards of attainment, but there must be those who are qualified to train the students to the point of efficiency. That any one can teach the Commercial subjects has been the idea of certain misguided folk. A generally prevailing notion has obtained that the teacher of 'sawbucks and pothooks', need have no special qualifications beyond an ability to transcribe her own notes before they get cold.

"Those who are in close touch with the business world and know the demands made upon the product of our school, realize that the teacher of shorthand and typewriting must be possessed of a training second to none plus a thorough working knowledge of her subjects and a generous supply of good business sense. The shorthand teacher must guide her pupils through the theory—teach the principles so thoroughly that as the students advance into the intricacies of the subject they learn to *think* in the art of shorthand—their thoughts are formed not into words and sentences of the language but into shorthand outlines.

"Typewriting requires no less skill and training on the part of the teacher. Competition in the marts of the world is so keen that the business man realizes that much of his success depends upon his daily communications. They must be couched in the most perfect language, stripped of all verbiage and prepared for transmission in a faultless manner. In no other branch of the high school curriculum do the results of a teacher's labors appear in so direct and tangible a form. Her students are the living epitome of her services. Water rises no higher than its source—'as is the teacher so is the pupil.' She should be expert in receiving and giving dictation as well as a perfect typist. No greater legacy might be bequeathed to her than to say that—She hath given of her life that the pulse of the world might beat with a new vigor.

"The teaching of Shorthand and Typewriting is as truly cultural as it is vocational, if taught by a well trained teacher. There is a mental growth in the study of these subjects equal to that derived from any course. There must be that concentration, close application, and self control which spells efficiency and success.

"Shorthand is based upon a language. Its teaching involves the basic principles of a language. Without a training in phonics, grammar, and composition of the accompanying language, such as English, German, or French, or any other modern language, shorthand is incomplete and not worthy of credit on a par with these languages. Only the proper recognition of this parallel work can give the best training in Shorthand. For Shorthand has no rules of speech separate from the accompanying language. Shorthand back to English is another and most important factor in Stenography. To write shorthand is one thing—to transcribe accurately is another.

"The art of shorthand writing requires such fineness of touch, close attention to detail and skill in execution, that when once well executed transcription becomes an easy matter. It is apparent that the more perfect the outline the easier becomes the transcription. It leaves the operator free to give his attention to the reproduction as to form, neatness, and general character of his work.

"Typewriting involves three principles:

I. A perfect understanding of the component parts of the machine.
II. Skill in adjusting and manipulation.
III. A thorough knowledge of the keyboard.

The operator must know his machine in detail as thoroughly as an engineer knows his engine. His trained ear and touch must be as acute as that of the physician, to diagnose disorder, and as ready to prescribe and correct.

"Skill in adjustment and manipulation is a large factor in obtaining speed in operation. I have previously mentioned to what degree the operator should familiarize himself with the keyboard. That course in Stenography which does not include 'Touch Typewriting' should not receive any consideration in determining standards for University entrance credit. Nor should students be awarded diplomas from high schools as fit candidates for commercial service, who are not touch operators. Anything short of such skill means inefficiency and a waste of education.

"That the University has been slow to recognize the work done in shorthand and typewriting in our high schools is not surprising to those familiar with the general character of work done, poor instruction, time devoted to it, and the junk shop equipment in some quarters. Only the latest models of standard make machines, with universal keyboard should find a place in our equipment,—if these cannot be secured then eliminate this feature of the commercial course. Let our motto be 'the best in the market or none at all.'

"These facts as theory may sound alright, perhaps, but permit me to outline a course of study in stenography based upon these ideals. The shorthand and typewriting courses should consist of two and one-half years; thirty-six weeks to the year, and five periods a week of forty minutes each with an hour's preparation. The first year to be devoted to the theory of shorthand; shorthand penmanship with crayon, pencil and pen; and the dictation of simple sentences. The second year, dictation and speed practice and composition in shorthand. The last semester of the Senior year to be devoted to dictation and speed practice along the varied lines of business activities, the taking of lectures, sermons, and court reporting, etc.

"As to the standards of efficiency, I do not think that we should consider anything short of the standards set up by the Civil Service Rules for examinations. In shorthand Civil Service examinations, dictation is given at 80, 100, 120 and 140 words a minute. Each article dictated is 250 words in length and consists of a portion of an address made either in the House of Representatives or in the Senate. (Each candidate is permitted to take all the dictations, and select any one he desires for transcribing.) Two marks, one for *speed,* and one for *accuracy,* are given, and are combined to obtain the average. The marks for speed are graded as follows: 70 for the 80 word a minute, 80 for the 100 words a minute, 90 for the 120 word, and 100 for the 140. A mark of 100 is given for accuracy, and from this three are deducted for each error."

Mr. Ford was called upon to preside in place of Mr. Ziegler.
Mr. Dewhirst, of Galesburg, opened the general discussion.

The following points were made:

1. The first foe that commercial subjects meet is the school man. The course that he prescribed is based upon what he has studied.
2. If there is any chance that a student go to college he is advised above all things not to take up the commercial course.
3. If he has failed in other studies he is advised to take up the commercial course.
4. Some principals merely tolerate the commercial course rather than trying to build it up.

Miss Wolf, of Paris, said: "the subject of shorthand is not taken seriously enough. People do not stop to think that it is impossible to take a six months' course in stenography and obtain a good position. The principles of shorthand cannot be properly taught in that length of time. Notes should be so written that they can be read easily after a year."

Mr. Ford: "How much credit should be given for shorthand and typewriting?"

Mr. Hilling: "One credit for each should be given, the same as in any other study.

Mr. Carrier, of Urbana, told how he has been forced to oversee his typewriting laboratory and to conduct a recitation in another subject at the same time.

Mr. Hilling: "This is just the thing that is holding our students out of the University."

Dr. Thompson, of University of Illinois: "The one thing that we must have is a unit of measurement. Mr. Hollister must have a unit by which to measure this work. It is not so much what the student has studied as whether or not the course has taught him to think."

Mr. Williams, of Derfield-Shields, offered the following motion: That a committee be appointed to propose a basis on which college entrance credit might be allowed for shorthand and typewriting. The motion was seconded and carried. The committee appointed by Dean Kinley is as follows:

A. R. Williams, Highland Park, chairman;
Grace F. King, Evanston; George D. Neilson, La Grange;
H. A. Finney, Clyde; John D. Bragg, Oak Park.

COUNTY SUPERINTENDENTS' AND VILLAGE PRINCIPALS' SECTION.

Met in Chapel, University Hall. County Superintendent B. C. Moore presiding. Announcements and suggestions from General Conference Committee.

1. "Standing and Credits of Village Schools" was discussed by R. C. Moore, Macoupin County. The following synopsis was prepared from the notes of the speaker:

The status of the village schools is unsettled. This condition is due in part (a) to the new high schol tuition law; (b) to the Court decision and pending rehearing on the high school district law of 1911; (c) the working out of plans for unification and standardization.

There are several problems presented. First is that of the program of studies. In many villages too many subjects are being attempted to make possible standard work. Therefore, the work lacks thoroughness. There is lack of uniformity. The programs of different schools differ too widely. The work in grades below the high school often lacks in thoroughness. Too frequently the school is "top-heavy." Too much attention is given to high school work at the expense of the elementary school.

A second problem is that of teachers. The number is usually insufficient to do the work that is being attempted. The teachers are too often untrained, or mere beginners in high school work. Changes are too frequent. Teachers get positions in larger high schools as soon as they develop efficiency.

Lack of equipment is a third problem. There is lack of room, insufficient library facilities, lack of apparatus for laboratory work.

Along with these other problems are unfavorable social and economic problems. With the tax-rate up to the limit in many cases there is lack of funds. There is also opposition to school expenses by wealthy and influential property owners. As a result there are many low assessments and much tax-dodging.

In many instances there is a lack of interest in schools. The seeming causes are (a) lack of ambition in villages; (b) a spirit of self-satisfaction; (c) lack of recreation that is elevating; (d) various demoralizing influences, such as frequenting the streets by young people at night; the smoking of cigarettes; loafing around livery stables, pool rooms, picture shows and restaurants.

Ideas of education are antiquated. Many influential older citizens do not realize the changes in social and economic conditions which demand a corresponding change in education.

But there are hopeful signs of progress. There is an increasing demand for better high schools in villages. Teachers are improving through attendance at state schools, especially summer sessions. Two hundred from Macoupin County enrolled at Normal in one year. The teachers are doing more thorough work in a few things, and are developing real power in pupils.

There has also been helpful legislation. The high school district law of 1911, and the free tuition law of 1913 are especially notable. High School Conferences, working out plans for unification and standardization are a great help. The improvements recently made in Macoupin County is a good illustration. A conference was held in March, 1913. The result is a standard unified course of study for city and village schools. Four high school districts were organized under the 1911 law. The Palmyra high school changed from one to three teachers, and from a three to a four year program. The Shipman high school changed from one to two and a half teachers, and from a two to a four-year program. The Brighton high school changed from two to three teachers, and from a three to a four-year program. Girard high school added a third teacher and standardized the four-year program. The Benld high school changed from one to two teachers. Under what at first seemed impossible conditions a new building was provided.

Discussion by E. F. Mitchel, Brighton, Illinois. He gave a synopsis of conditions at Brighton. The community has changed from one to three high school teachers in order to meet requirements. Lack of funds and lack of community spirit detrimental factors and patrons must be set right as regards these.

2. Vocational Work for Village Schools. This subject was presented by I. A. Madden, of Normal, who spoke as follows:

"There is at present a great gulf between us and the realization of all the possibilities of vocational education in our country and village schools. This great problem seems to baffle the mind of man to such an extent that he is unable to grasp it and reduce it to a state of realization. What we can do with vocational education is only a dream, but the history of the race tells us that where there is a dream it is not long until some genius appears and makes it a reality. Let us hope that this genius soon comes and brings to our schools a real vocational education for which we are groping, yet, of which we have realized only enough to make us clamor for all that is in store for us; let us hope that within the near future our desires will be realized in their richest and fullest sense.

"It is generally conceded that the training of the young farmer is in the hands of the school, where he must obtain knowledge sufficient to solve the problems which confront him in his career. He must have some training as a chemist that he may better understand the treatment of his soils or any other problems which deal with the chemistry of the farm; as a physicist that he may better understand levers, pulleys, electricity, capillarity in the soil and hundreds of other problems which I cannot mention here; as a blacksmith that he may better shoe his horses or judge the work of his blacksmith; as an engineer that he may survey his land for tile drains, fence lines, and understand the handling of concrete and other building materials; as a carpenter that he may better understand the construction of farm buildings; as a doctor of veterinary medicine that he may better understand the treatment of animal diseases, or at least the detection of these diseases; as a mechanic that he may better operate and keep in repair the complex machines of the farm; as an accountant that he may be better able to compute the profits and losses of the farm; and as a contract attorney that he may better understand the farm papers with which he has to deal from time to time. All this and much more that I have not mentioned must be learned in the home, in the school, or must be learned at a far greater cost in afterlife. Some of the things of the above field can be learned in the home as well as in the school, but the majority of parents seem to think they have done enough for the boy when they have taught him to harness the horse and guide the plow.

"Again the young farmer cannot afford to wait until he is the manager of a farm to learn these things, for this is the time of his life when every dollar he can make is precious, and he cannot at this time be paying for information that he should have learned as a boy. Besides paying dear for his experience the world pays dear for its food because the farmer is not on to his job.

It follows then that the school if it will train an intelligent farmer must impart to him the knowledge of the fields mentioned above and all others which point to his success, to such a degree that he can and will successfully meet the issues of his later life. When the country and village schools have done this for the coming farmer they will have eclipsed all the vocational education of the large city high schools with all their cabinet making, metal turning, wood turning, pattern making, forging, moulding, etc. Agriculture by its very nature swallows up nearly the whole field of manual training as it exists today, and I could not separate the two if I would. Yet in this paper I shall try to confine my thoughts to agriculture as much as possible and will only break over into the other field where it is necessary to cover the point.

"If agriculture is to live and hold the important place in our school curriculum that it should hold, there must be such an improvement in the content of the course and in the technique of presentation that we would not know it a dozen years hence. It is often said that the teacher is the first to belittle the work that has been done and wish for the old to be entirely wiped out and the new which is worth while put into its place. Now I am not belittling the work that has been done in vocational education in our schools, but I do wish to show you that there must be a radical change in the teaching of agriculture or in time it will be turned down by the patrons of the schools because it has not fulfilled the mission for which it was created. We must have a new agriculture in our public schools. An agriculture that must have for its slogan the perpetuity of nature's greatest gift to man—the fertile soil. The old farms must yield up to the husbandman more bounteous crops than man has yet beheld if we accomplish the mission which the teaching of agriculture should realize. With this great central thought in mind let us plan our courses in agriculture in such a way that each one of them will reflect either directly or indirectly to the accomplishment of this end—the maintenance of soil fertility, and the feeding of the multitude. The courses in agriculture that we offer should be so woven together that it would be impossible for us to pick at a point here or there without the least idea as to where it would lead us. They should be so arranged that we would teach for the prosperity of the nation and not for the interest of the boy as the first aim.

"Perhaps one of the greatest of our besetting sins in this line of work today is to teach about the thing and not the thing itself. We often put text books into the hands of our pupils, and ask them to be able to recite to us a mass of material of which they have no idea as to its meaning. The best teacher in the land could use all the ingenuity of the craft, and yet the child would remain in blissful ignorance of the very things for which the book was written. Some of the subject matter in our text books in agriculture does contain valuable material which the boy can get from the book, but there is so much material that can only be gotten by the laboratory method that the little that can be obtained by class room method seems insignificant.

"One of the best books that has been written for the students of agriculture in high schools was put on the market last summer. It is a book dealing with farm animals. As I have stated this is one of the best books for high school work that I have seen, yet I have seen it as a foundation for some of the poorest work in teaching agriculture that I have ever witnessed. Not long ago I visited a class that were using this book as a text. They were studying swine, and spent most of the hour discussing the various merits of the Essex and Victoria swine. The points so far as the book was concerned were covered with great exactness, yet I would risk the assertion that not one of the boys in that class would know an Essex or a Victoria hog if he should see one on his way home from school. The pupils knew the color of the breeds studied, but they had not the least idea as to the differences in these hogs and others of the breeds. It is true that they had studied the differences in the book, but they had not learned to couple the ideas of the real hog with the book hog, and the book hog with the real hog. If this teacher had spent the time that was spent in teaching about hogs that are rarely seen in Illinois, in discussing the hogs that were actually where the boys could see them his work would have counted for much more in the end. Would it not be better for the boy to know much about one breed of hogs that are common to the community than to know a little of the history and markings of many breeds that are not known in the state? This is but one example of the misuses of the few good text books in agriculture. The author of this book could not write a special book for every state on the continent but when he left it to the teacher to pick from his text the things that were of vital importance to the boys in his class he failed to do it. This our teachers of agriculture must learn to do if they are to teach with success. In fact I believe that with the preparation which most of our country teachers have it is dangerous to put the texts in agriculture which are on the market today in their hands. They are almost as apt to teach the wrong thing as the right thing and the mistakes they make are apt to be reflected in the boy and also in the standing of the teacher in the community.

"This discussion of the previous point raises the question as to the merits of some of our present texts in agriculture. I can tell you with a clear conscience from the experience that I have had with these texts that they are all wrong. It is tragic to think that we can find sufficient space in three or four hundred pages to cover the entire field of agriculture and cover it in such a way that the boy will know a little something of every phase of the question and be thereby fitted for a more profitable career. The market is flooded with these books, and a new one is off the press every few days. We read them, they sound well to most of us because we read between the lines our own experiences, but we fail to consider that most of our teachers and none of the boys in the class have had these experiences. We adopt these texts in our schools, and ask the poor unsuspecting teachers to do the best they can with them. The press is stimulated by this ready sale, and more of the same kind are thrown onto the market for us to accept. Fellow teachers, it is put up to us to protest against these books if they are to be eliminated from our schools, and it is up to us to insist on something worth while being substituted in their place. What will these substitutes be? It is only a guess on my part, for it is hard to foretell the trend of human affairs, but as I see it, in the future the great field of agriculture will be split into its many subdivisions, and each of these subdivisions will be treated in a separate text book, and in separate series of lessons and laboratory exercises, just as we treat the separate phases in arithmetic as percentage, mensuration, etc., or as we treat the different phases of geography, history, or in fact any subject which has been in the curriculum long enough to be thoroughly organized. There will be needed more than a specialized set of texts as I have suggested. There must be laboratory guides, and special instructions to teachers as to the conducting of these exercises in the laboratory and in the field. These points cannot be made in the texts, and it will be a long time before many of our teachers will have the initiative to work these things out for themselves, or even the necessary preparation to suggest them. I believe the specialized texts are coming. They have been in our colleges for some time, and some have recently found their way into the high schools where they have met with great favor; but our high school courses are still badly in need of texts that will suit the work of the high school, and form a connecting link between the school and the home.

"The proposition of securing teachers to handle these texts when they do come is the most difficult problem which presents itself today. In fact it is so large a problem that some county superintendents have given up in despair and have gone back to the three R's where they are more safe than they would be if they attempted to recommend teachers that could teach agriculture. I wish it could be my privilege to suggest a way out of this difficulty that would really lead out, but I can only suggest what has come to me; and I am not at all certain that I am on the right road. In the first place the problem of the training of teachers might be handled by the institute method, but this would involve more than one institute each year. In fact with the present corps of teachers that most of you have to deal with an institute once a week would not be too much. At these institutes the teachers would be able to get the work outlined for the week, and the subject matter so well in hand that they should be able to present the work in an acceptable manner at least. The institute instructor could take precautions that only work that could be adapted to that special district should be outlined for lessons, otherwise the work, though well planned and well in hand, would end in chaos. The weekly institute idea will hardly meet favor in most counties on account of getting the teachers together at the end of each week. Monthly institutes would help a great deal if nothing better could be had.

"There is another difficulty which I suppose has suggested itself to most of our county superintendents who have tried to introduce agriculture into the schools, i. e., the matter of time with the teacher. With the load that the teachers in the country and village schools are bearing it seems almost impossible to add more to their burden, and much less ask them to make a success of a new subject added to the curriculum. How then shall we solve the problem? It has occured to me that if agriculture is worth while in our schools it is worth while to do it right. Why include in our curriculum the word agriculture, and yet teach something which does not begin to solve the problem. If agriculture is worth while in our schools it is up to us to spend the money necessary to make it a success. In a number of our more progressive counties today we are paying men from $2,500 to $5,000 to try to teach the hard headed farmer to mend his way and raise better crops. If we are willing to spend this amount of money to break up the habits of forty or fifty years, why can we not spend a similiar amount in educating the farmers of tomorrow, the boys of today who are willing and anxious to learn? Have we not confidence enough in our boys to invest this much money in them, or are they such an uncertain quantity that they must make something of themselves before we will risk money in aiding them? Why not have a county expert for the farmers of tomorrow, as well as one for the farmers of today? Or if one will not answer in some of our larger counties then two or three? Let them be assistants to the county superintendents, and let them spend their time in the country and village schools directing the vocational work, and especially the agriculture work for which they should be especially fitted. I believe that this money spent on the farmer of tomorrow will eventually return a far greater profit than double the amount spent on the farmer of today who refuses every offer for advancement that is brought to his door. I know that the county experts are doing a vast amount of good, but I also believe that county experts for our schools could do more good. So far as I am aware Cook County is the only county that has atempted anything along this line, and the men they have appointed are not strictly agriculture experts nor do they devote all their time to this line of work. We need in our schools the most able agricultural teachers that the land affords. We will have to pay them liberal salaries; but remember we have promised to educate the young farmer, and the prosperity of our nation will not permit that we do only a half way piece of work. These men would have considerable difficulty in visiting each school often enough to be of any real service in conducting classes in agriculture, but their chief mission would be to outline and organize the work for the teacher, put her in touch with the real problems of the hour, and direct her to the places in the community where things of interest are available. This would relieve the strain and worry that would be heaped upon the teacher by the addition of another course to the many she is already teaching.

"I believe that a plan such as I have suggested is a feasable one, and I see no reason why we should clamor for vocational education until it commences to mean dollars and cents and then abandon the whole project or so cripple it by lack of funds that it can never accomplish its mission. Now I do not claim that I have suggested the only solution to this problem, but something must be done to help the teacher to handle this work, for it is a burden she will not be prepared to bear as long as country schools are organized as at present. A number of our teachers today are prepared to do something with the subject of nature study, but when you get over into the subject of corn breeding plots, judging farm animals, and fertilizing soils of various compositions they are completely lost. Just as soon as they step into the vocational work and offer something of interest to the boys they step into something of which they know nothing. To illustrate I want to tell you about a young man who had studied some nature study, and had taken a small lot on the school farm to demonstrate his ability as a grower of corn. One evening in June he escorted his wife out to the prize plot to show her his handiwork. After she had looked over carefully and complimented him on his skill she asked why the strip of ground was left vacant at one side of the field. He answered that he had learned that the west row of corn was never pollinated well so he had decided to get ahead of nature and had refused to plant the west row. Let us hope that our blunders of the same nature will not be told to the best friends of our wives. All this was done by a capable young man who was elected to a fine position, but here he had gotten into work that he did not understand.

"At another school where some agriculture was being taught the lady in charge of the work in agriculture displayed some fertilizer plots where for several years she had been trying to demonstrate the effect of bone meal when applied to the soil, and especially with regard to its effect on the yield of corn. At the end of a number of years the yields of corn seemed to indicate that bone meal had not affected the crop. This is an excellent experiment when carried on well, but in this case two fundamental principles of scientific agriculture had been disregarded in the effort to prove another. In the first place the crops had not been rotated, and the corn crop was not limited by a soil element but by insects and fungous diseases; and in the second place it has been proven that bone meal can never be used profitably in corn culture; hence some other fertilizer should have been used. I believe that soil test plots, and corn clubs are a valuable thing in connection with the school, but it takes a near genius to make a success of either one. If the boys take a plot on the home farm it almost invariably becomes papa's contest, and if they find a place in the school garden they are sure to neglect the work in the vacation months when it needs most care. I have investigated several successful corn clubs, but upon investigation they proved to be more of a success of some ambitious editor, than a success of the boys. The handling of these clubs could best be handled by our agricultural expert, and even he will fail if he is not careful.

"At this point I want to enter a plea for more actual work in connection with the work in agriculture, and not so much theory from our books without putting it into actual practice. So much of our work in agriculture comes from books and has little meaning to the boys when they do not actually experience the things that are being discussed that little or no good is gotten from the work. We cannot get around the fact that we learn by doing in agriculture as well as any other study, and the sooner our boys get on their overalls and get busy the better for them.

"A class of 15 boys in the University High School at Normal built nearly 250 rods of steel fence around the University farm. All the work in connection with the building of this fence was actually done by the boys, and they were not once forced to call for help to get the problem solved; and I want to tell you that I have seen the same fence set up by men from the American Steel and Wire company and the work was not done any better than these boys did it. Their first problem was to survey the farm and establish the fence lines. They studied the records of the county and city surveyors, found all the corner stones referred to on these charts, and with this data located all the fence lines. They then measured and determined the actual amount of fencing needed, the number of posts, and the amount of material needed to make the concrete which was to imbed the corner and end posts. When the material arrived, they set the end and corner posts in concrete, braced them securely and then set about setting the line posts. When these were done they spliced and stretched the fence, and I can truthfully say I never have seen a better fence of any kind, and I know that it has attracted the attention of the farmers of the community to such an extent that the local companies offered to furnish us fence for the remainder of the farm at a considerable reduction, if we would put it up to advertise their wares.

"Now I know you will say that these boys could have learned to make a fence at home, but the truth of the matter is that they would never learn to make a fence at home on many of the farms. Fences are made and patched as they were many years ago, and with our new woven wire coming into such prominence the boys must learn to handle it in the most efficient way. Now this work was real education to most if not all the boys. They learned to use the surveyor's maps and instruments, to handle concrete, to estimate the amount of pull on the corner posts, and to provide a suitable anchor for this strain. And lastly they learned to stretch a woven wire fence as it should be stretched, and attach it to the end and corner posts as it should be atached. Did they waste time? Not a bit of it. They could have studied the theory of fencing and concrete making for months and they would have gotten nothing from the course as compared with the good they obtained from actually doing the work.

"There are so many things where the student can actually get out and do the work with his head and hands and learn the best way to do it, that I shall have time here for only a few points to use as illustrations. At present I have two classes who are working on concrete construction. They have made sidewalks, posts, walls, and lawn rollers, to date; and one class is just framing a large horse roller made to roll the campus. They have worked out the design of the roller, determined the weight, the amount of reinforcing, and lastly have framed it and attached a pair of shafts to it. All this work was done with the hands. They were thinking all the time it was being done, and you may be sure they will know something about concrete when they have finished. They designed their own post molds, and made posts of different mixtures that will be tested for strength as soon as the concrete is sufficiently set.

"One of the models that they got the most pleasure from was the making of a miniature silo on the scale of one inch to the foot. There was considerable rivalry as to which group could construct the best silo, and some good work was done along this line. It would have been better for them to have worked on a larger silo, but since there was none to make they got what good they could from the small one which was reinforced as a larger one would have been. In these classes I have boys from the farms of Illinois who have no idea of what a silo is like except that it is cylindrical. They do not know how the silage is put into or taken out or what causes it to keep while in the silo. In the small models they come up against the problem of dimensions of walls, doors, foundations, and reinforcements, all of which they can put into practice when they build a real silo. They have some idea of what a silo is when they are through. We also visit all the silos possible, and compare the good and bad points of each, and make a study of the materials of construction used in each one.

"Our courses today consist in doing too many little things and doing them in a half mannered way. Let us take for example one of the most common examples in Illinois agriculture, and one that is taught wherever agriculture is known in the curriculum, i. e., the judging of corn. If there ever was a waste of time in our schools and colleges it is the time wasted in judging corn as it is judged today. Boys and men spend hour after hour in laboratories measuring corn, deducting points for misplaced kernels, for a few kernels lacking at the butt or tip, and a few more points for a cob a shade off in color. What does this all mean? It means that they are trying in some way to increase the corn yield and they go at it blindfolded and in the most unscientific manner one can imagine. In this scientific age why not put the subject of corn judging on a scientific basis and select those ears for the blue ribbon on the merit of their productivity and not on the merit of looks? When Mr. Reid, the man who gave to the world the famous Reid's Yellow Dent corn, died his widow called in one of the best seed corn men in the state and asked him to take the best from the corn selected by Mr. Reid, grow it and preserve to the people of the state the great corn. With this seed corn man went the chief in plant breeding at the Illinois Experiment Station, and after the seed corn man had selected the best from the pile the plant breeder selected several bushels for use in his experiments. The seed corn man asked why he chose the poor corn when he might have some of the good. The plant breeder replied that when the harvest time came he might have the best crop.

"This is exactly the vulnerable point in the whole business of corn judging as it is carried on today. The corn that we pick out and tie the blue ribbon to may not yield one-fourth the crop that will be yielded by the more inferior ear, or the ear which was unfortunate enough to have had some insect destroy its chance to pass the inspection of the score card. Now I am not saying that all the time spent with the score card is wasted, but I do contend that the work is largely unscientific and a waste of time so far as practical results are concerned. After all we are after nothing but the high yielding corn, and if our score card does not point the way to a high yield then let us seek the thing that will. Of course we have done some good in teaching the boy or girl to reject the poorer shaped kernels, etc., but we have yet to prove that the discarding of these kernels means an increase in the corn yield. Tests with the best selected ears show that some of the ears will produce excellent crops while others produce only a few nubbins. Why not spend the time we spend with the corn score card in teaching the boy or girl the art of breeding high yielding seed corn rather than teaching them to mark time and select for beauty alone. Show me a school in Illinois, or a dozen farmers in the state where corn breeding is actually carried on, and I will show you hundreds where judging is actually carried on by the hour. This is however only one of the places where our agriculture courses need remodeling. At the Normal University we teach our young people to judge corn, for they would not be admitted into the schools of the state if they did not know this fine art. I will admit that the teaching of corn breeding will be a great deal more difficult to teach than the subject of corn judging, but if we accomplish our ideals we should expect to strike the rocks once in a while.

"Another great loss of time and energy which takes place in our courses is in the use of the Babcock test for testing milk and milk products. The way this work is carried on today can only lead to blind alleys, when great good might as well come from it. I have in my classes students who have taken courses in agriculture and nature study, and when asked what the Babcock test is for they say it is to detect 'robber cows.' The next question is what are robber cows and the answer is that they are cows that do not give enough milk to pay for the feed eaten. Upon further inquiry I find that they do not know whether a cow should give 1000 pounds of milk in a year or 10000 before the board is paid. This is a shining example of leading our pupils up to the cracking of the nut and stopping before any good can come from it. Why not take them to the barns of the community, see the cows, study them, and the feed they are getting, and then test the milk and determine if the cow is paying the farmer a good profit? Why shrink from these things when they are what we really want yet hesitate about going after them? Is there any disgrace connected with putting on of overalls or aprons by the teacher and his class and going out and actually doing the work as it should be done and studying the results as they are obtained?

"Another point that we are entirely overlooking in our modern courses in agriculture is road making. Today hard roads is one of the most important things with which the farmer has to deal. Perhaps he will never be directly engaged in building public roads, but he will always be interested in roads, and will have an interest in the affairs of the day that deal with the road problem. Why not teach him to know a good road when he sees one, to direct the making of roads if necessary, and to know that good roads are essential to him as well as to the city man? Show him that thousands of dollars are wasted every year because the roads are bad when the crops should be moved. It increases the cost of food to the people in general, and it reduces the farmer's profit in his crops. Just as sure as fate the time is coming when the crops of the farm will be carried to the market on large motor trucks, and the roads will be in such shape that this truck can go any time of the year. Trucks will not be owned by one man, but communities will unite in the effort to cheapen the cost of marketing their crops. A man and a team today engage in hauling crops to town, and provisions to the farm, but when hard roads come one man with a motor truck will haul ten times as much as a farmer with a team, and he will travel ten times as fast to and from town. This is no idle dream. It is already a reality in our country, and it will spread to all sections.

"This idea of cooperation brings up another thing. It suggests that in the future the farms will not be large ranches as they are today, but smaller estates that can be farmed by one or possibly two men. Each man will take care of his own farm most of the time, but there will be cooperation among all the farmers when team work is needed. On many of our farms today there are hundreds of dollars worth of machinery that goes out of date or rusts out long before it has paid for itself. What is the use of a farmer with forty acres of grain to harvest owning a self binder when there are about three days work for the machine in the year? Why not three or four farmers invest in a self binder, and thus have $150 invested where there are today $600? Would they lose money on this proposition? Look up the statistics on the life of farm machinery and see for yourself the great waste that the farmer must sacrifice to get his crops to market. Can we do anything to control this waste in our school systems? We would remedy it quicker if we would work with the farmer directly, but at the same time we are doing this let us work with the future farmer, and make him see that the great waste of today lies in poor management more than in some of the other reasons we are too willing to assign. Today farmers cooperate and buy a silage cutter to fill the silos of the community, and yet each one buys a grain elevator that is busy about one hour a day for about thirty days, and the rest of the year it stands in the fence corner. Why not have ten or even five farmers own an elevator, and take turns in husking the corn of each one? These are some of the things that must be drilled into the heads of the coming generations. We cannot afford to see this machinery and money lying idle and finally decaying without having paid the interest on the investment. Some of these things come in the problem of farm management, yet most of our courses in agriculture ignore the problems of farm mangement.

"I cannot close this paper without a plea for some of the studies that should accompany the work in agriculture in our schools. It is too bad that in a number of our high schools of the villages and cities where agriculture has been introduced there has been a tendency to abandon the sciences of botany, zoology, chemistry, and physics, and substitute in their stead agriculture. No greater mistake than this could be made. Students of agriculture by all means should be well grounded in these four sciences which form a base for all scientific agriculture. Leaving these sciences out and putting agriculture in is like building a house without a foundation. We expect to teach the young farmers scientific agriculture, yet we have not the least foundation on which to work, for we are trying to teach something for which the boy has no preparation and of course he cannot develop the scientific side of the questions, the very side which he is seeking. We must never forget that agriculture is an applied science and as such it must be taught. The boy must know the principles of the science before he can go far in their application. Now I know we cannot teach physics, chemistry, botany, zoology, etc., in our country schools, but we can take some of the time we devote to nature study when we are teaching about things, and teach the boys some of the simpler principles of botany and zoology. Then in the upper grades these principles can be applied to the problems in agriculture which they will help to solve.

"I doubt if I have done more in this paper than emphasize the fact that agriculture as a vocational subject is today in a state of chaos, but I hope that many of you will attack the problem and help to bring order out of chaos as has been done with the other studies of the curriculum."

Discussion by E. C. Shields, Mazon, Illinois. Gave condition at Mazon. Course practical. The work for the boys as well as the girls arranged so as to meet local conditions. Work made practical by direct experimentation. Home and farm problems solved and studied in the natural habitat of those problems. Visits to home and farms. He reviewed the local interests which has steadily grown in favor of the work as the patrons have begun to see the advantages of such a course.

3. "Plans of Unification" was discussed by Miss E. Kirk, of Hutsonville. She gave the conditions in Crawford County. County conferences have been held. The final results were that plan of H. A. Hollister as given in State Course of Study is practically the basis of the work. So far the work in English seems to be the best unified of subject matter taught. A discussion followed.

Myrtle Trowbridge, Tazewell County, reviewed conditions in that county. They follow course as suggested by H. A. Hollister. At a county conference the schools agreed upon the plan.

D. W. McCarty, Woodford County, spoke of the conference in that county and stated that the unified course was now under way there. Plan of State Course, or Mr. Hollister's plan, proves successful.

B. C. Moore, McLean County, spoke of the very successful work in his county. Plan a great success. Credit relations and high school tuition act a great incentive.

Business. Election of third member of executive committee of the Section. G. B. Chapman, Chatham, Illinois, elected. As instructed, lots were drawn for length of term which is as follows:

1 year —G. P. Chapman, Chatham.
2 years—B. C. Moore, Bloomington.
3 years—Frank A. Gilbreath, Watseka.

It was decided by the committee that Mr. H. A. Hollister should designate who should act as chairman and secretary of this committee for the next conference.

Adjournment.

Domestic Science Section.

The section was called to order by the Chairman, Miss Bevier. After announcements the report of the executive committee was read. Attention was called to the report of the Home Economics Committee of the Commission of the National Educational Association on the Reorganization of Secondary Education, as given in Bulletin No. 41, 1913, U. S. Department of Education.

The following suggestions were made by Miss Pincomb as the result of a study in values or the evolution of domestic science:

"After listing the possible outcomes from the teaching of Domestic Scienec, it seems of paramount importance that the teacher should have in mind as her aim in each lesson, the establishment of definite habits, prejudices, ideals and standards, and attitudes of mind as well as the teaching of certain facts and principles.

"A large number of the acts and processes in connection with the preparation of food and clothing and the care of the house, should become automatic in order that the mind may be free to attend to that which requires judgment, and that the acts may be performed in the best way, i. e., that the movements may be convenient and economic, and the results attractive, suitable and sanitary.

"But the establishment of these habits in school is not sufficient to insure their being carried out as the student performs her tasks under different surroundings and without supervision, unless there has gone with the training in making the fundamentals automatic, the formation of ideals of these same methods of work which prejudice one in favor of the habit form. The prejudices acquired partly through the formation of the habit, and partly because of discussions regarding the value and importance of the method of procedure followed, lead to the generalization of the habit and its application under any circumstances. This idealizing of the method of work in order that the specific habit may become general makes essential the daily discussion of the importance of and the reasons for giving attention to details of the acts and processes which are to be carried out. The few minutes at the beginning of every laboratory period devoted to such discussion is not only not wasted but of inestimable value.

"The numerous processes which should become automatic indicate strongly that the teaching of Domestic Science should not be left to the last years of the high school and to the college, but that the elementary school and the early years of the high school as well should offer such training. These processes further indicate that the high school work should by no means be largely theory work. Three laboratory and two recitation periods would seem much more suitable than one or two laboratory and three or four recitation periods.

"The importance of the habits which may result but frequently *do not result* from the teaching of Domestic Science in the school makes imperative the finding and following of a method which will insure their formation. Such method, it is believed, means, first, comparatively small classes—not more than twenty and preferably sixteen; second, *daily* attention to details which necessitate lessons not over crowded with subject matter. This would also mean separate recitation periods. Third, standards of good workmanship, which are formed only by seeing and handling that which is well done and by comparing and criticising efforts made.

"The definite prejudices, ideals and attitudes listed, which it is believed *may* result from the teaching of Domestic Science, the teacher must feel responsible for *causing* to result. These somewhat intangible controls are not quickly formed, and indicate that the subject should extend over a considerable length of time, as throughout the *entire* high school course.

"The facts and principles which should result, indicating a very direct relationship with physiology, chemistry, physics, art and economics, mean that food should follow at least a course in elementary science, and that the work in food and in clothing cannot be completed in the early years of the high school. The number and nature of the facts and principles belonging to each subject, food, clothing and home, go to show that the putting together of all these into a one-unit course is not wise, but that each of the three should constitute a one-unit course, at least not less than one-half unit.

"The following suggestion for the placing of Domestic Science in the High School curriculum, it will be noted, is not different from the recommendation of the committee in 1911.

1st yr.—clothing, drawing, science.
2nd yr.—food, drawing, science.
3rd yr.—food one-half yr., clothing one-half yr., science.
4th yr.—home, civics and economics, science.

"From this study the following suggestions for further work might be made:

"1. A complete list of facts and principles which are essential to thorough understanding by the high school girl of the subjects, food, clothing and the home. Such a list with suggestions for application in specific class exercises, in briefest possible form, might be prepared by the high school conference committee and constitute a revised syllabus.

"2. A minimum standard for courses in food, clothing and home. When the first suggestion is carried out, the determination of which facts and principles are really used and needed in daily life, hence absolutely essential in the course, could be made. The result of such a study might well take the form of another revision of the Syllabus of Domestic Science and Domestic Art for the High Schools of Illinois."

"The Principles of Natural Science fundamental to the teaching of Domestic Science in the High School," was discussed by Miss Mary Moore of Chicago, as follows:

"The principles of Natural Science basic to Domestic Science are in my opinion easily comprehensible to pupils of secondary schools, if simply presented. I also believe that these principles are comparatively few, though their applications are numerous and far reaching; and if they are sharply impressed upon the minds of the pupils by proper correlation in the work, the very important business of home-making, which we are trying to teach, may become intelligently systematized and simplified.

"Experimental knowledge is generally accepted as the most valuable, since it is knowledge gained at first hand. Besides cultivating the powers of observation and of reasoning, the technic of manipulation and the useful knowledge gained for immediate or future use, are often extremely valuable. However, experiments are of value only as a means of demonstrating or making clear some underlying principle—and this principle must be co-ordinated at once with the work in hand, must be shown to be a thing vitally connected with it—or the experiment is a waste of time and energy.

"In considering the Sciences upon which Domestic Science is based we seem to be more indebted to Chemistry than any other. It is so vital a part of Physiology, it is so interwoven with Bacteriology and is so closely allied to Physics that we must, almost inevitably, begin with certain theories, laws and phenomena of this science. The human body and its needs—Food—its composition and function: fuels—the great means of preparing foods suited to the growth and the work of the body; all these I believe can best be understood by first knowing something of atoms and molecules; elements and compound; union and disunion.

"The pupils can be made to see that atoms are the infinitesimal units by which the universe is built; that atoms are united or bound together to form molecules; that atoms of one kind form molecules of elements like Sulphur—Carbon—Oxygen, etc.—existing in individual masses or volumes; that atoms of different kinds are bound together in molecules called Compounds—as water, salt, etc. By a few experiments, chemical changes are shown to be due to the union or to the disunion of atoms. From this, the union of certain elements to form cell protoplasm can be understood, i. e., the simple cell contains C, O, H, N, and S. Then the pupil learns that these same elements grouped together or united in different combinations give the different classes of foods—our Proteins, Carbohydrates, Fats and Mineral Salts. It should then be clear that these supply certain definite needs of the body;—for since the cell contains C, O, H, N, and S, and many mineral substances, it demands just these things in its food. These first steps in Chemistry seem to me necessary, that the chemical composition of different kinds of food may be understood and that the function of these different kinds of foods may be made clear.

"Further illustrations of the union of atoms is found in the composition of our fuels that group of carbon compounds called Hydro-Carbons—those common substances upon which the cooking of foods is chiefly dependent at the present time.

"*Disunion* of atoms is fundamental to an understanding of the decomposition of fuels by heat, preliminary to their combustion. It is necessary in order to understand the decomposition of organic matter in nature and the fermentation of food materials, called decay. It is certainly required if one is to understand the splitting up of the food molecules in the process of digestion.

"Oxidation is but one more adaptation of the theory of the union of atoms. Whether it be the burning of the tallow candle and the back log in the fireplace, in our grandmothers' time, or the illuminating gas and the hard coal of our own day, it is all one and the same chemical reaction that goes on in the cells of the body when the food is oxided to give warmth and power. Oxidation explains very many of the processes of every day life. It belongs in Physiology, in cooking, in the heating and illuminating problems and it plays an important part in the process of bleaching and in removal of stains. The products of oxidation or combustion should not be forgotten. Whether they are the ashes of the kitchen fire or the ashes of Metabolism their character and removal are vitally important.

"Hydrolysis—'A double decomposition involving water'—is needed to understand the digestion of starch and the inversion of sugars within the body. It also helps to explain the action of certain ferments outside the body—as in the process of bread making, the starch is changed to the different sugars preliminary to the action of the ferment zymase. The nature of acids, bases and salts can be learned as well from experiments on food materials and ordinary household chemicals as from unknown, and unrelated substances in the chemical laboratory. The interaction of baking soda with the citric acid of the lemon, the acetic acid of vinegar or the lactic acid of sour milk is the first step toward a knowledge of the character and work of baking powders. The action of acids upon metals, of alkalis upon paints, varnishes and oils, is basic to the chemistry of cleaning. The action of alkalis upon fats explain both the saponification of fats in digestion and the process of soap making.

"Our introduction of physics is in the transmission of heat-radiation, conduction and convection—the three methods of heat transference are among the most simple of our experiments. They are readily shown to be the basis of our various methods of preparing foods by means of heat. Toasting and broiling are methods of applying radiated heat. Boiling and stewing are examples of heat applied by convection. Sauteing is the application of heat by conduction and other methods are a combination of two or of all of them. 'Convection currents' due, to the expansion of water by heat, explain the theory of our hot-water system of heating houses. A tea-kettle with an elongated curved spout forms a 'unit' of such a system readily understood.

"The expansion of gases due to heat, the consequent increase in volume and decrease in weight per unit of volume, is the basis of an explanation of how a big stove in the basement of a house, i. e., a furnace, can heat a house of several stories. It also helps explain methods of ventilation. Another application of this law is to be found in the baking of flour mixtures—the resulting 'light' or porous character of the product being due to the expansion of the steam, air or gas. It is applied in the theory of the modern household refrigerator. The air circulates through the different chambers, because the warm air must rise and the cooler air must fall.

"Vaporization and evaporation, a physical change in water due to the heat absorbed, are capable of a variety of applications. Steam having the same temperature as boiling water, may be substituted as a means of cooking foods; and it possesses certain advantages over the boiling water. Its absorbed heat is also utilized in heating buildings. The rate of evaporation is determined by such conditions as the surface exposed to the air and the relative amount of heat absorbed, or—expressed in other terms—it depends upon the shape and size of the vessel and upon rapid or slow boiling, as shown by practical daily tests. That slow evaporation reduces the temperature is demonstrated in cooling of the body by means of perspiration. Water in a porous earthen jar is kept cool by the same process.

"The effect of atmospheric pressure upon the boiling point of water has been tested by many house-keepers in strange lands and at strange altitudes—when certain foods would *not* cook in ordinary time. This depression of the boiling point due to reduced atmospheric pressure is applied in the vacuum-pans used in concentrating syrups. Its converse, the rise in temperature due to increased pressure, is the principle of the 'Pressure Cooker.'

"Rise of boiling point resulting from concentration of solutions is as well shown by the use of sugar and salt as in any other experiment possible. It is one of the 'principles' of candy making, and the thermometer indicates exactly the moment when proper concentration is reached.

"Depression of temperature, due to solutions of certain substances, leads to the theory of making ices and other frozen mixtures. Salts of Ammonia when entering into solution absorb heat from the water. Common Salt does the same. The melting ice, as it dissolves the salt, produces a solution having a temperature below that of the ice. It absorbs heat from the contents of the inner can. This phenomenon together with the conductivity of the different materials used in constructing the freezer explains the principles of the ice-cream freezer.

"The conductivity of heat by solids has numerous applications. The difference in this respect between copper, brass, aluminum, iron and enameled steel explains in part, the advantage of certain metals over others in cooking utensils. The fact that wood and certain other materials are non-conductors of heat is well employed in the construction of the refrigerator, and in the fireless cooker. The new stoves with nonconducting lining, the covers used to drop over boiling kettles for the purpose of conserving and utilizing the heat already developed, are evidence of efforts to adapt scientific facts to economic ends. The specific heat of metals, their conductivity, their expansion due to heat, the chemical action of acids upon them—these taken together should determine the suitability of materials for use in cooking utensils. This is a phase of the subject which, I believe, has received but little attention from teachers of 'pure' Science. It is, however, a matter which very much needs thorough scientific attention.

"The Physical and chemical effect of heat upon food materials make up a large part of what are termed the 'Principles of Cookery.' The changes wrought by heat, upon cellulose and the starch grains; the flavors developed, and the effect upon digestibility comprise vegetable and cereal cookery.

"The inversion of double sugar by acids and heat is essential in the process of candy-making. It should be considered in connection with jelly-making and with the stewing of fruits. All of the various methods of cooking meats are based upon the effect of heat upon albumins. If the juices and flavors are to be retained a high degree of heat is used to coagulate the surface. If, as in soups, these are to be extracted from the meat, a temperature below the boiling point of water is employed. Other methods are but a combination of these. The ease with which certain fats are decomposed by high temperature determines the choice of the fats and oils best suited to various purposes. The effect of acids and of certain coagulating ferments, or enzymes, upon the casein of milk is the initial process of cheese making—and one might continue almost indefinitely.

"Botany also contributes a not unimportant measure of material. The plants of simplest structure, their development, reproduction and the conditions suited to their growth, form a necessary introduction to the work of Bacteria, Yeasts and Molds. An elementary study of the more complex forms of plant life teaches plant structure, plant physiology and the storing of starches, sugars and nitrogenous foods. The best methods of preparing these foods, their ease or difficulty of digestion and consequently their value, is largely determined by the character of their structure, i. e., by the nature of the cellulose and the starch granules.

"Even a little study of pectin throws a new light upon the entire process of jelly-making—a few tests for that substance are well rewarded. Aside from the food question which is ever with us, a knowledge of plants, shrubs and trees is of the greatest value in beautifying the home, the streets and the city. While acquaintance with the different woods gives a fund of knowldge on which to draw in deciding such questions as the interior finish and the furnishing of a home.

"The care of the horse, the imperative need of perfect cleanliness,—especially with regard to foods, their preparation and care,—depends for its intelligent execution upon a knowledge of the principles of bacteriology. We may if we choose, call it sanitation, but the root of the matter lies in the science, bacteriology. It is only a knowledge of these micro-organisms; the rapidity of their multiplication; the conditions conducive to their growth; the products of their life-growth; their enzyme action upon foods; and the numerous means of distribution, which render control of conditions possible and successful. All methods of food preservation are based definitely upon scientific knowledge of the foods, the moisture and temperature required by bacteria. Man must contend with this army of unseen invaders for possession of his food, but such knoweldge as this makes him the victor.

"In canning fruits a temperature above the thermal death point of the vegetative form of bacteria is essentially the secret of success. The 'intermittent' method employed in preserving vegetables is a practical application of the method used by Tyndal to cope with the 'sporeformer'—since that type of bacterium can always be relied upon to create a disturbance under ordinary conditions of sterilization. Cold Storage—of the commercial form or in the home—means simply the use of a temperature below the average optimum temperature for bacteria—this prevents their multiplication. Salts, spice, acids, etc., are inhibitive substances. Drying reduces the normal and necessary amount of moisture; hence the successful keeping of dried fruits. The process of evaporating milk owes its success to the fact that bacteria will not continue active in a fluid, the concentration of which is greater than that of its own cell content. The temperature at which milk is pasteurized is chosen with reference to the temperature at which specific disease germs are destroyed. The entire question of a sanitary milk supply can be taught from the standpoint of bacteriology alone. Few articles of food have received the scientific and the legal attention given to the control of milk production, transportation and distribution. This is a most important feature of domestic science work.

"The water-supply and its possible dangers is another example of applied bacteriology. Sewage disposal or purification is chiefly a matter of bacterial action. The nitrogen-cycle serves to illustrate both the conservation of matter and the ceaseless activity of these minute organisms as they split up the harmful and oxidize it into the harmless or the useful.

"Butter-making, cheese-making and ripening, vinegar-making and bread-making are all processes which depend for their success upon an understanding of the bacteriology and chemistry involved. Salt-rising bread, it is said, no longer presents the distressing state of uncertainty as to results, since the enterprising scientist has discovered the micro-organism which produces the correct chemical changes and the desired flavors. In all of these various processes there are many different micro-organisms at work; many varying conditions to consider; numberless enzymes with which to reckon, before success is an assured fact. We can only conclude that a broader, deeper knowledge of science is our only reliance—the surest foundation upon which to build.

"It is not the purpose of this paper to discuss experiments suited for demonstrating these principles of science, or even to outline a series of them. These must naturally vary to some extent with conditions; must depend upon preliminary preparation of the pupils and upon the time and place given to the subject in the curriculum. There has been, in my opinion, a tendency to multiply the number of experiments in a blind belief in their value. The term 'experiments' has been a word 'to conjure with;' to many it has a pleasing, satisfying sound indicative of progressive, up-to-date methods. Instead of making clear a vital principle, they have, I am convinced, often befogged the mental vision of the pupil and made of her mind what Kipling describes as a 'rag-bag of useless information.' The experiment undoubtedly has its place—and a most important place it is—of this also there can be no question; but let us have a somewhat limited number of experiments, well chosen, logically arranged and clearly stated. Let us then insist upon careful study and performance of these, encouraging the pupil to draw independent conclusions and to make definite and extended applications. Co-ordination between the specific experiment and the work in hand cannot be too strongly emphasized. In conclusion, we must train our girls to *think,* and to *use science* to attain that most desirable goal, the 'control of environment.' "

"The Method of Teaching Principles and Experiments" was discused by Miss Thomas of Springfield. Her paper in part was as follows:

"Of late years we have heard a great deal about making the work of the public schools less theoretical and more practical, and there may be some who consider that it is necessary to teach little or no science in connection with Domestic Science courses. It seems to me that there are two methods of learning to do any manual work. One is to be shown *how* to do a certain thing by someone who already knows, and then to practice until the muscles are trained to perform that act, or, in other words, until a habit is formed. In the other method, an explanation accompanies the demonstration so that the pupil knows *why* he makes certain movements, and although it is necessary to develop the habit before one can be said to be skilled, it is a saving of time and energy if one does not blindly imitate some other person's acts. Our foremothers learned Domestic Science by the former method, but the girls of today have different home conditions and in many cases are taught very few household tasks in the home itself. The school is trying to meet this need and compensate for the lack in the home. As there is not sufficient time for continued practice in any of this work at school, the scientific side of Domestic Science needs to be emphasized,—that is, reasons for methods should be fully explained.

"The principles underlying the processes of cooking and cleaning, an understanding of the composition of foods and the processes of digestion, depend to a great extent upon the principles of natural science. Thus it would be very desirable if girls who take Domestic Science in high school could be prepared by having had a number of courses in natural science. But we can at present presuppose almost no work in this line.

"As to methods of presentation of these scientific principles, a few general statements may be made now and definite illustrations will follow in connection with particular problems.

"In the first place we must remember that we are teaching these facts not for their own sake, but for their application to household tasks; therefore we must endeavor not to waste the pupil's time with so much theory that there is no time for practical work. Some of the more commonly known scientific principles the pupil already may know, but does not realize that they have any relationship to household tasks. By giving the pupils questions to be answered out of their own experience, many of these facts may be presented. For instance a list of good and poor conductors of heat when studying the transmission of heat will be easily made out by the pupils without help.

"Another method is to assign reference readings in books which may be available. I believe that technical language is often a stumbling block to the high school pupil and that many references are misunderstood. The Farmers' Bulletins published by the United States Department of Agriculture are simple enough to have meaning to those who have not had scientific training.

"There are certain new facts which should be presented by experiments as those things which are seen are much clearer than those which are learned by explanation alone. Individual work is best where possible, and when it is not, the students should be allowed to help in the performance of the experiment. High school pupils especially often receive mistaken ideas from passive watching of phenomena presented to them.

"A knowledge of grammar school physilology is presupposed as a part of the preparation of students for high school, but there are some new facts which need to be presented and some old ones reviewed in connction with Domestic Science courses. A mere outline of digestion is given in elementary physiology and this should be enlarged upon. The place of enzymes in the digestive process will be a new idea and a good way to present this is by an artificial digestion experiment, such as the digestion of egg white with pepsin, or coagulation of casein by rennin. The process of absorption may be presented by an experiment showing osmosis. The course which the food takes after absorption may be shown by diagrams. Metabolism will need to be explained by the teacher.

"In the field of chemistry, there are many principles which are fundamental to Domestic Science. An explanation of elements and compounds should be given by the teacher as it would probably take too much time to do experiments showing the synthesis of elements to form compounds and the analysis of compounds into their component elements. The chemical composition of the body and food materials will be largely presented by explanation also, but the color tests for the identification of the food principles should be performed by each pupil, if possible. The use of the food charts put out by the United States Department of Agriculture are also a great help in presenting the composition of foods.

"The effect of heat upon the food principles can be shown by experiments in which different degrees of heat are applied to starch, sugar, protein, and fat. For instance, an experiment illustrating the effect of dry and moist heat on starch, one to show the different properties of a sugar syrup with different temperatures, one to show the coagulation of protein and the curdling or hardening with higher heat, and one to show the decomposition of fats with high temperatures, would give a brief summary of the principles of cookery.

"The effect of acids upon starch and sugar and the effect of alkalies upon fats could be shown by experiment before the class. If there is sufficient time the class might make soap individually, but it is not essential.

"When the study of leavening agents is reached, experiments should be made with litmus, or some other indicator, to distinguish between acids, bases and salts. The fact that a gas is given off when leavening agents react may be shown by the collection of some of the carbon dioxide over water.

"In connection with the study of fuels the essential facts of combustion should be given. The necessity of oxygen may be shown by experiments with a candle and an arrangement of chimneys, showing a good draft and then cutting it off altogether.

"The principles of physics which are of most importance to the student of Domestic Science are those in connection with the subject of heat. The methods of heat transmission should be discussed in their application to the methods of cooking and good and poor conductors of heat might be illustrated by an experiment to determine the relative time required to boil water in utensils of different material. The calorie is an abstract term and will require definition and explanation and every student of Domestic Science should thoroughly understand it.

"The simmering point and boiling point of water should be determined by experiment and it seems worth while to call attention to the relation of air pressure to boiling point.

"The theoretical reason for the use of salt with ice in freezing mixtures could not be given to a class of girls who had not studied physics without considerable explanation. However, the temperature of crushed ice may be taken and also the temperatures when different proportions of salt are added to the ice. The effect of dissolved substances upon the boiling and freezing point can also be shown by experiment.

"The microscopic plants, bacteria, yeasts, and molds, should be studied as to structure, growth, food required, and effects upon materials of the household. The structure may be learned from examination with a microscope or by means of drawings or plates. The growth may be studied by planting these plants in the proper food material. The real changes produced by growth will be microscopic, but the effects upon the food can be readily seen.

"The structure of starch grains may be shown either with a microscope or by drawings. Microscopic work where there has been no preceding science, may prove unsatisfactory; if the girls are not familiar with it, they may not know exactly what to look for and therefore not see it.

"From botany also we get our knowledge of the manner in which nitrogen is obtained from the air by leguminous plants. This might be shown by some plant to which root tubercles containing the nitrogen-obtaining bacteria are attached.

"In conclusion we might again refer to the distinction between desirable and fundamental. In this paper only those principles and experiments of natural science which are considered really fundamental have been presented."

Discussion of these papers brought out the necessity for classification of students as to preparation and class in high school; the advantage of a course in elementary science preceding the food course; and the desirability of developing the scientific atitude of mind.

In the afternoon "Art Principles and Suggestions for their Application" was presented by Miss Hill of the Champaign high school. Her paper was substantially as follows:

"We have sometimes heard it said that the fault with the special teacher is that she believes that her special subject is of more importance than any other. I cannot say that I have ever felt that way about my work, but since the art work has been correlated with the Domestic Science, I feel that it certainly has a most important place.

"Can you not look around in your own high school and see girls who most certainly need help concerning their dress, either in color or style? Even though the girl does not go to college and study Domestic Science, we surely can teach her to think more about dress and thus help her to make a better appearance in after life. In many cases taste must be cultivated. I think of two examples: both were girls with red hair, one a high school girl who wore a red dress, thus killing all the beautiful color in her hair; the other, a little girl in the grades who persisted in wearing pink hair ribbons until the teacher told her she thought brown would bring out the color of her hair to better advantage.

"First we will take up design as it may be applied in the sewing classes. At the beginning of the year, the girls sew on under garments. At the same time in the art classes they are working out embroidery designs which may be applied to these same garments. We select specimens of flowers or berries that would be especially adapted to embroidery designs and make careful studies of them in water color. Some of the specimens most successfully worked into designs are mountain ash, barberry, dwarf sun flower, cosmos and wood vine. After the study is made in color, the design is worked out from the study. The first problem required is the design for a night gown yoke. In this case the most interesting point is the center and the design is worked from the center. Then the question of curves comes in and we find that the compound curve is the best to use. There are two reasons for this: first, because of equal divisions; second, they should not be divided into thirds for the same reason. We should aim for subtle measurements letting the curve come between the half and the third. Other problems given are designs for waists and collars.

"While we are working with design, each girl is required to work out an envelope problem. The envelope is made of mounting paper and measures about 12 by 18 inches. This has a corner design and monogram of three initials worked out by the owner. The envelopes are used to keep the pupil's work in.

"Then we take up color and its importance in dress and the home. The colors as commercially taught are as follows: primary,—red, yellow, blue; secondary,—green, violet, orange. Of course tint and shade play an important part in color study for we would seldom use a color in full tone, although we have complimentary colors. That does not mean that we cannot use such colors as brown combined with blue, brown combined with rose pink or soft green combined with yellow. If you are using a blue next to a brown, it is better to put a little of the brown into the blue and a little of the blue into the brown, thus making them blend together.

"The pupils are required to make a color scale showing the tints, full tones and shades of all colors. They also make a page of designs using the complimentary colors showing how white, gray and black affect color. The plaid designs are worked out with thought given to space divisions and to color. We present the problem of plaids by comparing the lines in the plaid to the lines in a good landscape composition with which most of the pupils are familiar. The divisions are given in this way, the horizon line should be placed either above or below the middle of the paper, distant trees a little above that, foreground trees arranged in groups, two trees on one and three on the other or three trees on one side and four on the other. This gives a good idea of unequal balance and may be applied in working out the plaid designs.

"After the pupils have a good idea of colors and plaids, we have them bring samples of what they consider good and bad plaids. We also give them ideas of what should influence one in buying materials for summer and winter dresses and they give examples of what they consider good.

"Later we take up dress design. The pupils study the style books and select examples of correct and incorrect use of color and line. Each chooses a good design for a business suit, an afternoon dress and a party dress. From this we work into dress design. Flat measurements are taken and from these the pupils draw their own figures and on these flat figures they design the dresses.

"In time I hope to have a sketch class for costume design. Members of the class will assume graceful poses and on these figures the designs will be worked out. It is evident that fashion illustrators are seeing the value of well drawn figures in their work, and who knows but what we are preparing some of these illustrators in our high school classes.

"The average American home is in sad need of renovating in regard to color. In choosing the color scheme for a room, about the first thing to consider is its lighting. If the room has windows on the north, warmer colors, such as browns, should be used. If the room is a south room, cool colors, such as greens and blues may be used, thus subdueing the warmth which comes from outside. To make a high room look lower, use horizontal lines in some way to break the height. To make a low room appear higher, use vertical lines in paneling.

"The Atkinson Mentzer Company put out a collection of interiors in outline which may be used very nicely in the public school for working out the color scheme of rooms. The problem may be presented to the pupil by giving him the lighting of the room and one color; from these he works out the color scheme.

"The work must be conducted in a practical way. Then the pupil, though she may never take up an artistic career, will feel some independence in using design and color in her home."

Miss Seymour of the University opened the discussion of this paper with the following remark:

"It is clear from the paper we have just heard that the ideal way to correlate Household Art and Art is to have the students work out the Art side of problems under the Art teacher. There are, however, many difficulties to be overcome in order to make this possible. The Technical High Schools have been so recently organized and their courses are so definitely differentiated that the original program has provided for this arrangement. In the classical High School there must be a readjustment of the whole program to make a curriculum for comparatively few, and not all principals are disposed to do this.

"The Household Art teacher then has to face the problem of what to do when none or only a few of her pupils are in the Art class. Most girls who enter the High School have had a fair, if not a very good, training in the principles of Art, although they may consider it as 'passed and not to be used again.' If the teacher has had Art training she will be able to bring out and adapt the principles of proportion, line and color at the appropriate time. Although the time is short it is possible to choose dimensions that are in good proportion, colors that are suitable and harmonious, lines that will be becoming and in good taste, and call attention to them. The width and spacing of tucks, the width of hems and ruffles, of lace and insertion, the relation between the width and length of bags, towels and aprons are all problems in proportion which, when carefully worked out, will form in the pupil the habit of considering such things when they meet them again. Tissue paper is a very simple and attractive medium for working out these problems before applying them to the real article.

"Tissue paper is again a very satisfactory way to work out the lines in costume design. A skirt on a small scale, designed just as it is to be in the large, and pasted together to look like the genuine article, will help much toward a realization of the bad lines and proportions without using much time or material and, in the end, will save time and material.

"Color is best managed by dealing with samples of actual materials as it is difficult to reproduce in any other medium the same effects. Color schemes for complete costumes, including hat, gloves, shoes, and any accessories, can be worked out with samples of material using the proper proportion of each. This should be done for garments to be made in class, first of all, and then for as many imaginary dresses as the time allows.

"In a course on the Home, we have to fight against family traditions and the mistaken kindness of friends. Sometimes it is possible to furnish a room or rooms with actual things. Sometimes it is necessary to make a minature house and furnish it completely, but more often, the only available way is to color interiors and represent the furniture and hangings on a flat surface. Color schemes can be worked out again in actual materials representing the proportion of each to be used, and pictures of furniture may be cut from magazines and catalogs representing the suitable type of furniture to use.

"Whatever scheme we adopt for working out our ideas, let us establish the facts that our dresses should be suited to the complexion, the type and the station in life; that candlesticks should be made of material that will not catch on fire or break; tables should not be top heavy or frail, chairs should not need a foot stool or cushions to make them comfortable; floor coverings should not remind us of roses or pet dogs. Let us hang our pictures so that the eye will not tire in looking at them, and arrange our furniture so that it conforms to the shape of the room and can 'stay put' because it is right. Let our rooms say one thing to us, as library or dining room, but not mantel piece or fruit picture."

Reports on the outlines for grade work as presented last year, were made by Miss Bell, Miss Baldwin, Miss Keys and Miss Stone. The following suggestions were given: The sewing apron is complicated for the fifth grade. Fifteen minutes of the lesson of one and one-half hour in length is used for explaining the new points of the lesson in sewing, and discussion of the textiles in use, and is carried on during the time that the girls are sewing. Consideration of the work of children of school age in textile and clothing manufacture. Too much work is outlined for the fifth grade. Some of the sixth grade work is simpler than fifth grade. Knitting and crocheting might be added. Machine work is desirable in the grades. In the seventh and eighth grades food course, a lesson on the cutting up of a chicken, correlating with physiology, might be added. Baked fish might be taught to advantage. Pie could be omitted and a second lesson on bread and bread judging, added. Cake lessons could be reduced to one. Cooking in the *first* lesson is desirable. There is too much duplication in the numerous scalloped dishes. Scalloped dishes were thought difficult for the early lessons, and poached egg difficult for the seventh grade. At first points in manipulation and cleaning must be given emphasis and the dishes kept simple. The first five lessons in the eighth grade work might be reduced to three. More lessons are needed in serving of meals.

As work for the present year, there was suggested the desirability of attempting to standardize Domestic Science classes as to grade and prerequisite. Another suggestion was the consideration of the special phase of subject matter and the method of presentation suitable for the grades and for the high school, using a limited number of topics for illustration.

Following is the executive committee for next year:
Helena M. Pincomb, University of Illinois, Chairman.
Alice Treganza, Bloomington.
Isabel Bevier, University of Illinois.
Elizabeth Stone, Decatur.
Mabel Dunlap, Decatur.

Miss Mary Moore, Chicago, was appointed as represntative on the joint committee to consider elementary science.

ENGLISH SECTION.

The fifth annual meeting of The Illinois Association of Teachers of English was held in the Moot Court Room of the University on November 21st, 1913. President Hatfield called the meeting to order at 9:15. The minutes of the previous meeting were read and accepted. The president appointed a nominating committee consisting of Professor Clapp of Lake Forest, Miss Skeffington of Charleston, and Mr. Lyon of Joliet. After announcements by the secretary, the session proceeded with the program. President Hatfield, in his opening address, gave an encouraging report of the progress of English teaching during the last year. The report follows:

"In every sort of activity which is directed toward an end men find it necessary to stop occasionally to take stock, to look over the past to see what has been done, and to study the present situation in order to see what needs to be done in the immediate future. It is something of this kind which we shall try to do for our own work this morning. In so short a time as we can spend upon it, the determination of future activity must be omitted, but it may be of some utility for us to pause long enough to realize the really great progress which our division of the educational army has made since we last met here. That the progress has been greater than the most sanguine hoped for I think you will agree. The total amount of territory gained from ignorance and slipshod methods is the important thing rather than some one brilliant achievement. Perhaps this year has witnessed nothing so calculated to inspire noisy enthusiasm as was the modification last year of the old college entrance requirements, but solid intrenchment of positions already won and the steady advance of the whole army, wagon trains and all, has been fully as significant for the final success of the campaign.

"My excuse for reviving this long-used metaphor of the army is that the teachers of English are now so very rapidly becoming organized into regiments and companies for greater effectiveness. We rejoice that there are no positive orders from any one above us, but one of the hopeful signs of the times is that we are losing our too-great pride of independence and coming to see that our efforts are usually most effective when we are in step with our fellows. The tide of organization set in two years ago this month with the formation of the National Council of Teachers of English. The National Council at the end of its second year has a marvelous record of achievement for the improvement of our craft all over the country. There are now more than 40 local associations of English teachers, more than half of which are affiliated with the National Council. All of these locals are in frequent correspondence with the officers of the Council and so catch its spirit. This last twelve months at least a dozen new local associations in states and cities have been formed as a result of the enthusiasm engendered by the National Council. At the next meeting of the Council, next week in Chicago, the conference of delegates from the affiliated organizations will be devoted to the discussion of ways in which the locals can help each other. Our own Professor Paul is one of the leaders of the discussion. The possible gains from this unifying of our ranks are three. The first we have already attained in a measure, namely, the exchange of ideas. The second is the banishment of that feeling of isolation which all of us have felt so keenly; we are rubbing elbows with thousands of other interested, and interesting people who are facing just the same problems that we face. The third possibility is the molding of public opinion and the influencing of authorities by acting together. Much smaller groups of people of less individual importance are able through close organization to get from public school boards and legislatures the things which they demand. If we want better conditions for composition teaching, let us begin to bring a little united pressure to bear.

"There is another kind of co-operation appearing. We have long talked about every teacher's being a teacher of English, but we have felt that that was an impossible dream. Now the matter is beginning to be discussed before assemblies in which supervisors are numerous. In a few places it has become a reality, as we shall hear this afternoon. If we can but once gain a thoughtful hearing from the administrators, there can be little doub of a great improvement in this direction.

"Many of you will remember the Hopkins report on The Labor and Cost of Composition Teaching, published eighteen months ago as a Bulletin of this association. The showing there made and since scattered broadcast throughout the land is having some effect. In at least two instances that I can name this report has been used as ammunition in a successful campaign for more teachers of composition. Iowa College, and the high school in Grand Rapids, Michigan, have greatly improved conditions and at least one member of our own association has recently made an earnest endeavor to get help using the same material. Whether she got it or not I have not yet heard. The logic of the figures is irresistible unless your school board is really out of funds.

"Every teacher has wished at some time, and most of us do it every year, for a good list of books for the pupils' general reading or for library purposes. This is now being supplied by a committee of the National Council of Teachers of English. Last year they published a tentative list of home readings, and this year they are getting out an enlarged list, with the character of the works of fiction indicated by letters standing for the kind of book, the period to which it belongs if historical, and roughly the age of children to whom it will appeal. Those who have looked the list through say that it is the finest selection yet made. It may be had from the Secretary of the Council for a dime. Members of the Council will receive it free. Along with this report goes the tendency to put more and more of the contemporary literature into the home reading and even into the classroom. This tendency is strongest in the West where the influence of college entrance requirements is least important.

"At the meeting of the Council a year ago, we heard some of the delegates from public speaking associations speak of 'standardizing' and almost wondered what they meant. Now the word is in the air. We have heard much from certain university gentlemen about the possibility of shortening the time consumed in going through the process of education by the elimination of wastes and repetition. This can be accomplished only when the course from the primary to the end of college becomes unified. That is, only when we reach definite conclusions as to what can be accomplished in each year. The next step is to see that the minimum established for each year is actually mastered by every pupil passed. The point which we high school teachers have been prone to overlook is that we shall have to take up the knitting just where the eighth-grade teacher dropped it. We cannot begin a new system all of our own and expect that the child will be at home. Perhaps we too often expect him to be a different species of being from the urchin who left the elementary school the spring before. This articulation of the high and elementary schools is being investigated by a National Council committee. They have spent two years of earnest study upon the problem and should have something worth while to suggest. The 'junior high school' composed of the 7th, 8th, and 9th grades, is one method which has been proposed. Perhaps this but puts off the difficulty until the child is better able to stand the change, but even that would be a benefit. Some towns have conferences between their high school teachers and the elementary teachers. This plan has the advantage that any of us can put it into operation without waiting for a change of heart upon the part of school authorities.

"The Modern Language Association started some time ago an investigation of the preparation of college teachers of English. The National Council has since taken a hand. The committees are collecting data to show what the demand for college teachers of English is, and what the preparation now offered the prospective teacher is. Later, they hope to suggest something of what that training should be. A similar investigation of the preparation of high school teachers of English has been begun, but no results have been given out yet.

"The movement for uniform grammatical nomenclature started in the Modern Language association and spread to others, including the National Council. The report of a joint committee is now in print, and will be discussed at length next week at Chicago. If we can all agree to use the set of terms which they have recommended a great deal of the present loss which every pupil suffers in passing from one school to another or even from one teacher to another in the same school will be eliminated. This might have been done in the smaller towns by frequent conferences between the teachers in these different grades, but the constant shifting of teachers makes even that difficult. In college classes the confusion of grammatical tongues has been a veritable Babel. Now the instructor will be able to understand all his students and, best of all, they will understand each other.

"The committee of the National Education Association on the Reorganization of the High School Course has now become a commission of the U. S. Bureau of Education, which will give the widest publicity to its findings. A pamphlet containing the preliminary report of the Commission has already been issued. In the report of the sub-committee on English, written by Mr. Hosic, your president last year, the emphasis is everywhere put upon the activities which are directly practical, utilitarian. The cultural side is not omitted by any means, but it comes after the practical instead of before the practical as it used to do. The most significant thing about this is the favorable comment it is stirring up, even in the conservative East. The first step in good citizenship or in culture is to be self-supporting.

"In the last number of the English Journal appears the report of the National Council committee upon Types of Organization of High School English. Assuming that the English course in any school should be largely determined by local conditions, and that there might be half a dozen typical kinds of communities, the committee set to work to collect data from high schools all over the country. One of the clear results is that there are no types of English course. The local conditions have not been allowed full play because the high school has been a college preparatory. Even where that is no longer directly operative, the difficulty of obtaining literature other than that of the college entrance list at reasonable prices has prevented variation. Those influences are failing; what shall determine our courses in the future? Clearly there needs to be a great deal of study of the needs of our communities if we are to keep up with our opportunities. The rise of vocational schools, only mentioned in the report, is already forcing a reconstruction of English in Chicago. The same thing is coming soon everywhere. The report of the Commission of the U. S. Bureau of Education to which I have already spoken, expects to have a report ready by 1915. In the meantime, they hope to see the materials and methods of high school English discussed thoroughly all over the country. Each of us may add his mite to the development of the courses that are to be in this country for the next twenty years.

"Oral expression is continuing its conquest of the high school field. Perhaps its advance this year has been less showy, just as the ocean swell is less showy than the surf, but it has not been less powerful. Here in Illinois this issue was thoroughly threshed out before some other communities had become conscious of it. In theory, at least, we have long recognized its importance,—or would necessity be a better word, though we may not have always put our theory into practice. All over the country interest in oral expression is growing steadily and healthily. In the old days, the righteous reaction against elocution nearly swept oral work from the English classroom. It was write, write, write, and red ink the ten thousand errors, but the errors still remained in the children's habitual speech and persistently reappeared in their writings. Now the pendulum is swinging back toward the middle of the arc. Oral expression is appearing as a part of the regular English work with all the gewgaws of elocution stripped off. The tendency is clearly away from special teachers for the subject of oral expression because we want to make it strengthen the other work of our course as it could not do if isolated in the hands of the special teacher. But I must stop here or I shall trespass upon Mr. Clapp's ground. The latest development of the oral expression movement is attention to the mechanics of speech. Having established our point that the ability to talk effectively about one's own ideas was fundamental, we are now ready to consider the mechanics of speech as means to effectiveness. Thus we are re-incorporating the valuable part of the old elocution, but as a means, not an end.

"The separation of composition and literature into separate courses is gaining ground, though slowly. This last year has seen the plan of separation inaugurated in the Chicago high schools. Madison, Wisconsin, now uses it, and Detroit has had it several years. As might be expected in a movement so new, the cleavage is not always along just the same lines. More thought and discussion is needed to make plain just the best procedure. This Illinois Association, always a pioneer, might well make a contribution here. The arguments in favor of the separation seem so strong that they must sooner or later receive a great deal of attention. Let me mention just two of them. As our work is now organized, the teacher when she is overworked—unless she has learned the value of real composition—is likely to assign a lesson in literature, because it is easy to prepare and there are no papers left behind. The boy who hates formality above everything but sentimentality is apt to count upon making up for carelessness or idleness in the composition work by brilliant recitation upon the literature. When the courses and the credits are divided, neither of these mistakes is possible. More important is the clarification of the teacher's aims. When one term is devoted to English as a tool, both for the expression of ideas and for their acquisition, and the next is devoted to English as art and ethics, we shall do better work because we shall know more clearly just what we are trying to accomplish all the time. There could be no more attempts to make novelists of our children in the time when they should be learning the simple narration and exposition which their lives will call for. And the worse crime of trying to teach pupils to read for the thought, to read analytically, that is, from classics of such delicate flavor as the De Coverly papers. Nor shall we try to make them love literature through Huxley's on a Piece of Chalk, in which he works out at length ideas which they have already acquired in freshman physiography.

"Let us try to get all this all in mind at one time, to take a bird's-eye view of the field today. The National Council of Teachers of English is serving as a clearing house for the exchange of individual and society opinions and as a neucleus for concerted action where influence must be exerted upon those outside our own branch of the profession. It is helping along the cause of articulation between schools of various grades, is furnishing figures upon the conditions of our work, is investigating the preparation of both college and secondary teachers, is publishing a good list of home reading material, is assisting in bringing about uniformity of grammatical nomenclature, and finally is preparing the way for a more scientific formulation of our high school English course. It is with pride that we remember that our Association here is affiliated with such a dynamic national organization. Never before have there been so many important activities going forward in our field at once, and if there had been there was no agency through which you and I could have been informed of them. We are entering upon the second phase of the oral expression movement, that in which attention is given to means of voice production. We are seeing positive advance in the conditions of composition teaching. As probable developments of the future the greater co-operation of other departments in securing correct English and the probability of the separation of literature and composition teaching loom up. All in all, then, 1913 has been the best year for the teaching of English."

Upon the conclusion of the president's address, Professor Clapp of Lake Forest presented the report of the committee appointed last year to conduct an experiment in the teaching of oral composition.

Report of the Experiment in English Composition.

"The Experiment which the Illinois association has conducted during the past year has been difficult, elaborate, but we believe successful. It has made a large draft on the patience, energy, and originality of a large number of teachers in many parts of the state. The result is a body of fact and opinion some of which in the judgment of the committee may be regarded as authoritative.

"A year ago in view of the growing interest throughout the country in oral composition, the executive committee of this association conceived the plan of testing the value of oral composition in high school English work. At the suggestion of Mr. Hollister, who knows the work and the possibilities of Illinois schools as few persons do, it was determined to draw up a program for a full semester's work in composition, taking the second half of the first high school year, when classes are largest and least mature, and when the work of the English teacher is most burdensome. If oral composition would work in that semester. under the actual school conditions of today, it would establish some claim to consideration as a regular part of the English course. A program was drawn up by the committee after conference with a number of high school teachers which could be taught either wholly by written exercises, the usual way in Illinois schools, or by a combination of written exercise and oral. Detailed work for the entire semester was outlined, according to the recommendation of last year's committee, giving composition half the time, each week, and incorporating various devices which had been tried with success elsewhere.

"The program was submitted to this body a year ago with the suggestion that it be tried especially in schools having enough freshmen to make two sections or over, that in each school two 'poison squads' should be formed, one section taking the course of written exercises and one the combination course in which two-thirds of the themes were oral and one-third written. The committee suggested also that small schools which had only a few freshmen might try the Combination course only, comparing the results with those obtained in former years by the usual method.

"The Association accepted the plan of the committee and 46 teachers, representing 37 schools, signified their wish to try the Program. Few of these teachers, so far as I know, had had experience with teaching oral composition, at least to the extent contemplated in the experiment. They were interested, rather, to see what could be done. As the Program is printed in the *Bulletin* for last January, it does not need lengthy description here. Briefly, the plan gave two and a half days each week to composition, for a semester of 18 weeks, for the Combination section. It provided a series of 17 oral themes and allotted 25 1-2 class periods to their delivery before the class, eight of these oral themes were to be worked over after delivery into written themes, which were to be graded but not corrected by the teacher and then corrected by the pupils in class under the teacher's supervision. Besides these 8 periods spent in class correction of the written themes, it was provided that 7 periods, during the semester, should be spent in drill on spelling, punctuation and grammar. The teachers were told, by the way, that in assigning an oral theme they should in every case show the class by their own example how to do the task assigned. They were advised to call for class criticism of the oral themes when delivered, from other students. They were asked also to meet every student in private conference upon the oral themes once a fortnight. To lessen somewhat the amount of time in conference and to promote rivalry among the pupils, it was provided that some of the oral themes should be worked up in collaboration by groups of 4 or 5 students, the class voting on these occasions as to which group had done best. The exercises included Description, Exposition and Narrative in about equal proportions. This was the scheme for the Combination sections. The same course was provided for the writing sections, but in these sections the oral themes were to be replaced by written themes on the same subjects which were to be corrected by the teacher in the usual way.

"This Program, used by parallel sections of the same class in a number of schools, would, it was hoped, furnish light upon three questions regarding oral composition, which seemed fundamental.

1. The relative amount of labor entailed upon the teacher by work in oral composition and by work in written composition.
2. To what extent proficiency in oral composition carries over into writing.
3. Whether the benefit of oral composition, even if it does not carry over into writing, is sufficiently great to warrant its general introduction into the high schools.

"The committee proposed to test the work in two ways: First by having 4 test-themes written during the semester by every student of every section, these papers to be preserved by the teacher and sent to the committee for examination. Second by obtaining the opinions of the teachers who conducted the course, at the end of the semester.

"As I have said, it was a difficult undertaking, requiring the active and intelligent co-operation of a number of persons for many months. Here was an elaborate semester task—an entire Composition Program which in every case was a considerable change from local methods and arrangements, and which in many cases required the teachers to attempt oral work for the first time, teachers many of whom were carrying a schedule of six classes a day.

"In view of the difficulties it has been a matter of surprise and pleasure to the committee that so many teachers succeeded in carrying through the experiment either wholly or in large part. Of the 46 who expressed their intention of trying the program, 30 carried it for a long enough time to have a definite opinion regarding its value, 23 carrying it through the semester and sending in reports, 7 others, 6 of whom sent reports, carrying it part way. Of the others, 6 who did not undertake it write to express their regret that local difficulties prevented them; one other writes that her school decided not to undertake it because it involved omitting for even one section the oral work which had become a regular part of their English course; from 3 others we learned merely that they did not try the program and from the remaining 6 we have had no word. Some of these perhaps, as well as other teachers of whom the committee did not know, may have tried the Program for part or all of the semester. If any such are present today, they will be able to supplement this report from their own experience.

"From the 23 teachers representing 19 towns who carried the Program through the semester, the 7 others who carried it part way, and the 4 who, though they did not try it, have written regarding their experience with oral composition in other years, we have a most interesting body of testimony. We have, first, the test-papers, written by pupils in the experimental sections and sent to the commmittee. These are less numerous than they might have been, and the fault, I fear, lies with the chairman of the committee, who ran off to London in June, instead of seeing personally to the collection of the materials. Some of the papers were mislaid during the summer, and others were destroyed by zealous janitors. Eight sets, however, or some 1,278 papers, survived the summer's accidents, and have been examined by the committee. We have, secondly, the answers of 29 teachers who used the Program, to a questionnaire sent out by the committee. Finally, we have letters from these and other teachers, treating points not touched in the questionnaire. The importance of this wide and varied body of evidence is considerable. The committee suggests that it be turned over to the Department of Education of the University, which may find it useful in some future investigation for other purposes.

"What does this evidence show? Let us first consider the students' themes which we may call Exhibit A. It is manifest that of the three questions on which the experiment was to throw light, these student papers concern mainly the second: To what extent proficiency (or at least practice) in oral composition carries over into written composition, in the first year of the high school. We have a body of some 1,200 themes, four from each pupil, representing 9 teachers in 8 schools: Chicago, Highland Park, Freeport, Moline, Farmer City, Lincoln, Centralia, Alton. They were written in class by pupils of both Writing sections and Combination sections, one at the beginning, one at the middle and two at the end of the semester. The topics assigned by the committee were: Test-Exercise A, a theme preferably narrative but similar to those written toward the end of the previous semester; Test-Exercise B, a letter to a friend who is coming to visit you, giving directions for reaching your home, or describing another friend who will meet the train; Test-Exercise C, a narrative theme on the following topic: We had an exciting experience yesterday (or a while ago); Test-Exercise D, an editorial for your high school paper on one of several suggested topics. These test-exercises, it will be observed, are designed merely to test the student's proficiency in writing, not his proficiency in speaking. Exercise C is the only one in which the student in the Combination section could use directly any of the material prepared for oral themes.

"The members of the committee, after examining the Test-Themes, though not so thoroughly as they could wish, agreed in the following three points. (The committee, perhaps I should state, is not a specially constituted body but the regular executive committee of the Association.) The themes written by the Combination sections are the better in thought and in rhetorical and grammatical structure, and at least as good as the others in the more mechanical points of form.

First, as to the thought, the rhetorical structure. As one member of the committee expresses it, 'There are at least four ways in which the student of the Combination sections seemed to me to have made the greater improvement. One of these is in thoroughness of treating each idea as it is taken up in the theme. In the themes of the Combination sections there is less tendency to touch on one matter, proceed to another and then return to the original idea a second time. The student seems to feel to a greater degree than in the others the unity of each idea and the advantage of developing it completely before going to the next.

" 'Another characteristic is the lessened artificiality. The writer seems to feel the reader much more directly and to address him more personally. The formality which is so common to most amateurs' writing is less in evidence.

" 'Besides these two advantages there is a third which seems to me worth while; it is the improved 'conclusions'. Many written themes, like many spoken ones, seem to have difficulty in giving any sense of finish when they have done. It strikes me that the work of the Combination sections is decidedly the better in this respect. The sensation of the end—which does not strike a chord, as it were, has apparently been much more apparent to them.

" 'A final gain which the oral students have made is in the general spirit of their work. Without any doubt they have a vigor and an enthusiasm and assail the task with a directness which the others more often lack.'

"Second, the themes of the Combination sections are the better in point of grammatical form. As another member of the committee puts it, 'I had thought that if there should be any loss it would be in reference to grammatical form, but I cannot see but that those who had had the oral and consequently less written work had as correct ideas of purely formal matters as the others.'

"Third, even in the purely mechanical points, spelling, punctuation and handwriting, the Combination sections are at least no worse than the Writing sections, which had written at least twice as much. Indeed the astonishing fact appears that many students in the Writing section show positive degeneration in these points of mechanics during the semester, whereas those of the Combination Sections do not. The fact will be evident, I think, to any one who examines the papers systematically. Nearly all of the children in all the sections spell pretty well in their first test-exercise; they have learned to spell in the grade schools. Their punctuation, on the whole, is poor in the first test-exercise, though in some schools, notably good. Their handwriting, though stiff and labored, is on the whole legible. But in the later test-exercises, many of the pupils in the Writing sections, whose spelling and handwriting had been good at first, have grown careless, so that their last work, Test-Exercises C and D, is distinctly inferior to that in Test-Exercise A. The Writing sections have somehow 'gone stale'. Their Composition work seems to have been unable to hold their serious attention in the face of their developing interest in life,—their school activities and their home affairs. The fact that this backsliding is not nearly so noticeable in the Combination section suggests that the oral exercises have retained the interest of the class; that the children have been able to make the Composition work a part of their life.

"The committee may have been in error in their observations. If the papers are deposited with the University Department of Education it is to be hoped that they may be examined again in connection with the work of that department, to test the correctness of the committee's judgment. But if this judgment is correct, the facts mentioned certainly tend to show that unmixed written composition is undesirable for students in the first year of high school, and that the main emphasis of that period should be placed on oral composition.

"The second division of the evidence obtained through the experiment, Exhibit B, consists of reports of the 29 teachers who tried the Program, and who have replied to the committee's questionnaire. Their reports are tabulated as follows:

REPORT OF TEACHERS USING ILLINOIS EXPERIMENTAL PROGRAM IN ENGLISH COMPOSITION, 1913

CARRIED PROGRAM THROUGH SEMESTER

		Sections		No. pupils in each Combination Section.	No. pupils in each Writing Section.	Time given weekly by teacher in preparation for each Combination Section.				Time given weekly by teacher in preparation for each Writing Section.			Time of preparation for Combination Section vs. usual method.	Improvement of Combination Sections in Speech	Are Oral exercises intrinsically valuable?	Minimum time required weekly per pupil for Oral Conference.	Improvement in Writing of Combination Sections vs. Writing Sections of this or other years.	
		Combination	Writing			Total	Oral Conference	Correcting MS.	Other	Total	Correcting MS.	Other						
1	Alton	2	2	a 28 b 28	a 20 b 20	3h	1¾	½h	¾h	3¾h	3h	¾h	Equal	Marked	Yes	5 min.	Greater	
2	Bloomington*.. [B]	1	1	26	27	4h	3h	1h	......	.....	.....	......	More	Some	Yes	(Gave 5 min.)	Equal	*15 weeks
3	Centralia	2	1	a 30 b 30	28	......	.....	......	......	.....	.....	.....	Less	Marked	Yes	....	Equal	
4	Chicago Lane Tech.	2	.	a 29 b 28	—	3½h	2½h	1h	......	.....	......	......	Less by ⅓	Marked	Yes	15 min. (Gave 3)	Greater	*15 weeks
5	Cicero	1	. .	20	—	5h	2h	1h	2h	.....	.....	......	Equal	Marked	Yes	8 min.	Greater	
6	Farmer City	1	1	24	24	2½h	1¼	¾h	½h	1½h	1¼h	¼h	More	Marked	Yes	5—20 min. (Gave 4)	Equal	
7	Freeport	2	2	a 24 b 26	a 28 b 28	......	......	......	......	.....	......	......	......	Marked	Yes	10—15 min.	Equal	
8	Geneseo	1	1	20	18	2½h	1h	1h	½h	2½h	2½h		Less	Some	Yes	None (Gave 3)	Less	
9	Heyworth	1	...	20	...	3½h	1h	1h	1½h	......	......	.....	Equal	Marked	Yes	5 min.	Greater	
10	Highland Park (A)	1	1	13	12	3½h	2h	......	......	1½h	......	......	....	Marked	Yes	(Gave 5 min.)	Greater	
11	Highland Park (B)	2	1	a 23 b 23	20	2½h	1h	1h	½h	4h	3h	1h	Less by ⅓	Marked	Yes	5 min.	Greater	
12	Kinmundy	1	...	21	...	2½h	1h	¾h	¾h	.....	......	.....	Less	Marked	Yes	(Gave 5 min.)	Greater	
13	Lincoln	1	1	28	25	3h	1½h	1h	½h	4h	3½h	½h	Less	Marked	Yes	3—6 min.	Greater	
14	Lovington*	1	1	17	22	4h	2¼h	1h	¾h	.....	3	......	More	Some	Yes	7 min.	Greater	*Program carried irregularly

15	**Moline**	2	2	a 20 b 23	a 24 b 23	3¾h	2h	1¼h	½h	4h	3h	1h	Equal	Marked	Yes	5-10 min	Greater	
16	**Pana**	1	1	29	31	4h	2½h	1h	½h	5-6h	5h	1h	Less by ⅓	Marked	Yes	5 min.	Greater	
17	**Sheldon***	1	1	14	14	7½h	3h	2½h	2h	1½h	2½h	2h	More	Some	Yes	(Gave 30 min.)	Greater	*15 weeks
18	**Springfield** (A)	2	.	a 26 b 26		3h	1h	1h	1h	.....	.	.....	Less	Marked	Yes	3—5 min. per fortnight	Equal	
19	" (B)	1	...	20	..	(No definite report)				...	... .	.. ..	Less	Marked	Yes	....	Less	
20	" (C)	1	..	21		2½h	1h	½h	½h	....	....	...	Less by ½	Marked	Yes	10 min.	Equal	
21	" (D)	1	1	28	22	.	......	.. .	... ..	.....	.. ..	....	Less	. .....	Prefers written exer.	. . .	Greater	
22	**Washburn**	1	..	15	...	2h	1½h	¼h	¼h	..	......	......	Less	Marked	Yes	15 min.	Greater	
23	**West Chicago**	......				1h	....	... ..	......				Less	Marked	Yes	10 min	Greater	

CARRIED PROGRAM PART OF SEMESTER

24	**Bloomington*** (B)	1	1	25	25	.		......	... ..	..	.....	....	Equal	Some	(Not in place of Writ'g)	15 min.	Less	*½ Semester
25	**Champaign■**	1	1	23	28	3½h	2h	1½h	......	4h	4h	......	Equal	Marked	Yes	(Gave 5 min.)	Less	*½ Semester
26	**Danville***	1	1	22	18	5h	2h	3h	...	7-8h	6h	2h	Less	Marked	......	10 min.	Equal	*¼ Semester
27	**Decatur***	1	1	28	30	.....	......	1h	. ...	.....	1½h	......	More	. . .	Yes	10 to 15 min.	....	*¼ Semester
28	**Jacksonville***	2	..	a 18 b 17	..	.....	6h	......	......	.....	......	......	Equal	Marked	Yes	1 hour	Equal	*½ Semester
29	**Taylorville***	1	.	. .		1½h	1½h	......	......	.....	... ..	......	More	Marked	Yes	10 min.	Greater	*½ Semester

As to the time required from teachers, of the 22 teachers who carried the program through the Semester, 12 say that the Combination method took **less time** than the usual Written method; 4, that it took **as much time**; 4, that it took **more time**; 2 do not report. Of the 6 other teachers 1 says that the Combination method took **less time**; 3, that it took as **much time**; 2, that it took **more time**.

As to the minimum time required by the Combination method for Oral Conferences, of the 22 teachers who carried the Program through the Semester, **9 say less than 10 minutes per week per pupil**; 4, who make no recommendation, **gave less than 10 minutes**; 1, who recommends **5 to 20 minutes, gave 4 minutes**; 4 say **10 to 15 minutes**; 1 says **at least 30 minutes**; 3 do not report. Of the 6 other teachers, 1, who makes no recommendation, **gave 5 minutes**; 4 say **10 to 15 minutes**; 1 says **1 hour**.

As to the improvement in speech of the combination sections, 21 teachers report **marked improvement**; 5 report **some improvement**; 2 do not report.

As to the improvement in Writing of the Combination sections, 15 teachers say that it was **greater than that of the writing sections**; 8 that it was **equal**; 4 that it was **less**; 1 does not report.

As to the question whether Oral exercises are intrinsically valuable enough to be adopted, regardless of whether they save time for the teacher or carry over into writing: **25 teachers say "Yes," 1 says "Not in place of Written exercises;" 1 says "I prefer Written exercises;" 1 does not report.**

"Let me hasten to say, for the committee, that no claim to minute accuracy is to be made for this tabulation. The figures are in some cases only approximate; records had been lost or teachers had moved to other schools; many teachers were unable to report on all points; their statements can give only probabilities, not exact proof. But anyone who will check the answers in one column by those of other columns will find that they tally rather surprisingly.

"We may notice that the schools reporting represent a wide range geographically and a wide range in size. The number of pupils in each section averaged about 25, only 10 sections having fewer than 20 students. There is great disparity in the number of sections with which the various teachers used this Program. In 7 cases the teacher had one section only, by the Combination method; in 3 cases, 2 Combination sections; in 13 cases, the normal task contemplated by the committee, one Combination and one Writing section; in 5 cases more than this amount. Some teachers carried this experimental Program with four sections, in all over 100 pupils, and report good results.

"In Composition teaching the time required from the teacher is a most important item. We asked the teachers, as an essential feature of the experiment, to keep account of the time they spent on their work, week by week. This is reported, though in some cases only approximately, in columns 6 to 12 of the table. It may be remarked that even allowing for error in the approximations, we have here a more definite, a more detailed record actually spent by a large number of teachers throughout a semester than we have had before.

"As to the time required in the preparation for each Combination section, of the 23 teachers who reported on this point, 11 say that it was 3 hours or less per week; 9 that it was between 3 and 5 hours; 2 that it was over 5 hours; 6 do not report the time. As to the time required for preparation for each Writing section, of the 14 teachers who report definitely, 4 say it was 3 hours per week or less; 7 that it was between 3 and 5 hours; 3 that it was over 5 hours. From this it appears that the Combination sections took less time in preparation than the Writing sections. But as 15 teachers do not report the time for the Writing sections, suppose we check these answers by those in column 13, the time of preparation required for the Combination work as compared with the usual method of Composition instruction. We get practically the same result. Of the 23 teachers who finished the Program, 12 say the time of preparation for Combination sections was less than would have been required by their usual method; 6 that it was equal; 4 that it was more; 1 does not report. Of the 6 teachers who carried the Program part of the semester, 1 says the time for the Combination sections was less than by the usual method; 2 that it was equal; 3 that it was more.

"We may check these figures again by the teachers' answers to the question, how the time of preparation for the Writing sections compared with the time required by their usual method. To save space these answers were omitted in the table. Nine of the 23 who took the full Program say that the time of preparation for each Writing section was equal to that required by their usual method; only 1 that it was less; only 2 that it was more; 11 do not answer, 8 of whom had no Writing sections. Of the other 6 teachers, 2 say the preparation time was equal to that required by their usual method; one that it was less; 1 that it was more; 2 do not report, neither of whom had a Writing section. To repeat, of the 23 who finished the semester, 12 say the Combination method took less time than their usual method; 6 that it was equal; 4 that it was more. Of the 6 who went only part way with the Program, 1 says that the time required for the Combination method was less than for the usual method; 2 that it was equal; 3 that it was more.

"The inferences from this array of figures seem to be, first, that the Combination method took less time than the usual method or than the Writing sections of this Program; secondly, that where the Combination method took more time it was because the oral work was new to most teachers and therefore went slowly at first, but that the time required grew less as the semester proceeded. Several of the teachers who report that the Combination section took more time than their usual method, themselves suggest this explanation.

"In this connection we may notice column 15 of the tabulation, which, to some of us, is the most interesting column of all,—the time recommended (and given) weekly per pupil for oral conferences. Several points here are noteworthy. First, only two teachers recommend, or actually gave more than 15 minutes weekly per pupil, and these two had unusually small classes. Second, that 13 of the 23 who finished the semester, recommend or actually gave less than 10 minutes per pupil per week (10 of these recommend or gave 5 minutes weekly per pupil or even less.) Third, those teachers who had the heaviest burden—three or four sections each and 80 to 100 pupils—say, most of them, that the oral conferences need no more than 5 minutes weekly per pupil. Evidently under the pressure of their heavy work, these teachers developed a high degree of efficiency, so that they made every minute of their conferences count, and thereby got results from their pupils impossible with the writing method alone. From Highland Park a teacher writes this fall, 'The second-year pupils are better trained this year in both oral and written work than last year. We attribute this success to the fact that the greater number of these pupils were in the oral sections last year.'

"The significance, then, of the figures regarding the time required seems to the committee to be this: Oral themes take much less time from the teacher than do written themes, and the time decreases as the teacher's experience grows (whereas written themes, like dish washing, take about the same time forever.) One teacher says in a letter, 'A single semester is too short a time to test the value of oral composition.' That is true: a longer time is needed to give both teachers and pupils the habit of it. Yet even in the single semester which these reports cover the tendency is plain.

"As to the improvement in speech of the Combination sections there is practical agreement. Of the 29 teachers, 27 testified to improvement and 22 say that it was marked; 2 do not report, one of these, who carried the Program for half the semester, saying that the time was too short to show results, but saying also in a letter that she believes in oral themes, which are in use in her own school with the 3d year class. The improvement noted is chiefly, of course, in fluency, somewhat less in clearness of enunciation, and least, as might be expected, in pronunciation and grammar. The most striking feature of the improvement in speech, however, is in regard to the general speech of the pupils aside from their oral themes; 20 teachers note marked improvement in this point. Consider the significance of that fact! It means changing the speech-habit of the young people, a thing most difficult to accomplish and the ultimate possibilities of which, with regard to the student's whole life, are enormous. If one semester's work in the English composition of the first year will make as good a beginning as this, what would be the effect of four years attention to this matter, particularly if we could have co-operation from the other departments, as has been obtained in some wisely managed schools?

"As to the improvement in writing, the report of the teachers confirms the opinion of the committee. Of the 29 teachers, 16 say that the improvement of the Combination sections in writing was greater than that of the Writing sections; 9, that it was equal; 3, that it was less; 1, who carried the Program only half a semester, that the time was too short to show. The general agreement of the teachers upon this point seems to us a remarkable fact. Taken in connection with the impression made on the committee by the themes which have been sent in it acquires double significance. Moreover, if we take merely the 23 teachers who had the full program, we find that 15 say the improvement of the Combination sections was more than that of the Writing section, 7 that it was equal, only one that it was less.

"Finally, 25 of the 29 teachers, and 22 of those who finished the Program, say that oral exercises are intrinsically valuable enough, regardless of whether they save time for the teacher or whether thy carry over into writing, to warrant their adoption as part of the English work; 2 say they prefer written exercises; 1, after a quarter of a semester, says 'time too short to show.'

Regarding all three of chief points of our inquiry, therefore, the answer seems to be in favor of oral composition.

"It may be objected that these teachers presumably were predisposed in favor of oral composition, or they would not have offered to try the Program, and were therefore likely both to teach the Combination sections more effectively than the Writing sections and to judge the results more favorably. To this objection, the only adequate aswer would be for teachers who are not yet convinced of the value of oral composition as part of the English work, who desire only to find the most economical, the most really efficient method of teaching, to try some such experiment as this, each for himself or herself. It should be noted, though, that as to the time required for the work, the figures speak for themselves: as to the relative improvement of the Combination sections and the Writing sections in written work, the opinion of the committee regarding the test papers which we have seen is even more decided than that of the teachers of those classes; finally, it seems from the teachers' reports that oral exercises, at least to the extent required in the Combination sections, were new to most of them. In view of these three facts it seems not too much to say that, with regard to the desirability and practicability of oral composition as part of the English course, the burden of proof has been shifted by the results of this experiment and lies now on those who support the negative.

"The teachers who used the Program were asked to report also upon two other points, regarding certain methods used in the Combination sections. The Program provided that some of the oral themes should be prepared in collaboration by groups of students, with the intention of developing co-operation and stirring a useful rivalry as well as saving time for the teacher. Regarding this group method, 22 of the 29 teachers say that it was a help to the work; 3 are uncertain; 2 say it was not a help; 2 do not report. The chief difficulty seems to have been the practical one of arrangement, of finding a time when the members of the group can come together. When this could be accomplished, however, the device seems to have worked well. In any group of

4 or 5 children there will nearly always be one quick witted, or thoughtful, or energetic youngster, who stimulates the others, especially if class rivalry has been stirred. Moreover, one of the most desirable of ducational reactions is thus obtained, the students talking over, thinking over their work together, constructively.

"One of the striking new features of progressive English classes throughout the country is the use of the dramatic instinct in young people. The most powerful tendency of contemporary world literature, the revival of the drama, has been taken hold of by the schools. Another device incorporated in this Program, accordingly, a development of the group idea, was the use of dialogue and dramatic exercises. The teachers were asked to report their experience and opinion of these exercises. Of the 29 teachers, 17 say they were a help; 6 say not a help; one says doubtful; 5 do not report. Thirteen say 'such exercises should be used in the second or third year rather than in the first'; 5 say in the first year (2 say in all years); 9 do not report.

"This report would hardly be complete without some extracts from letters received this fall from teachers who used the Program in the spring. I take these letters in the order in which they stand, alphabetically, in the file 'brickbats and bouquets.' From Bloomington a teacher writes, 'At the end of the year I felt that the class doing more oral composition was as satisfactory in written work as the class in which the written work was stressed, and that they had gained in ability to speak English more correctly.

" 'I think, however, that it would take more than one term for a conscious gain to be realized by a class as a whole, that is for the pupils to feel the equality between a written and an oral theme, for custom has made them 'honor' a carefully prepared written theme. The experiment satisfied me that our English work would be improved by introducing more oral work and reducing the written work.'

"From Centralia. 'The experiment was worth while. It gave me new ideas, increased my resourcefulness and showed me wider possibilities in first-year composition work. Many of the excellent results of the course can not be shown on this record sheet. * * * Already I have given some oral themes this year, not because I am satisfied that the principles of rhetoric can be taught as well by oral as by written composition, but because I believe that the pupils need oral composition, whether or not the principles of rhetoric are thereby as well taught.'

"From the Lane Technical School, Chicago. 'Much of my conference work was done with groups of boys, and a saving of time was thereby effected. My classes took special interest in the team work. Indeed, some of the boys who are now with me in second year English are asking if we are not to have more of that work this year.'

"From the J. Sterling Morton School, Cicero. 'I have made the following comparison between a second-term first year class of 24 boys who did our regular work and a class of 20 girls who followed your oral program. The boys had some written work and some oral, though less than according to your Program. Time per week—oral conferences half an hour; written work conferences 1 hour; manuscript corrections 1 1-2 hours; preparation 1 1-2 hours; total 4 1-2 hours. Result: written work shows standard improvement; oral work medium improvement; much more interest shown in the oral than in the written. General average of all composition grades for the term, 71. The girls had the Combination course of the Experimental Program. Time: oral conferences, 2 hours; manuscript conference, 1 hour; preparation, 2 hours; total 5 hours. Result: written work,—the improvement was very satisfactory; the amount of the written work practically equalled that of the first class, as the written themes were two or three pages in length; the class correction period, however, saved the red ink time. General average of all the composition grades for the term, 85.

" 'From the above statement, I draw three broad conclusions: First, that the longer time required for the experimental course was due to the longer conferences and more preparation by the teacher. The latter was hard work. Second, that the time used by red ink in the one case was better employed in the conferences in the other. Third: that the regularity of work in the experimental course repaid the increase of time by lessening the number of delinquent hours.

" 'In conclusion, I may state that I am again trying your course in a class of boys only, and the results thus far have agreed in every particular save one: The time in preparation has decreased fully 100 per cent., because I know how exactly what to do.'

"From Lincoln. 'I was so pleased with the outline that I am using the same plan in both my first and second year classes now in Ely, Nevada (where they have had no oral composition) supplemented by some written work. I feel that I have gained by my study, and hope to get better results this year.'

"From Lovington, 'One point you do not discuss in this list of questions. My class as well as I myself found oral composition far more fascinating than the written work. We all went at it with a zest unknown to the usual composition class.'

"From Pana. 'I experimented very seriously with one Writing and one Combination section, and my gleanings are these: The pupils of the Combination section gained in facility of expression vocabulary and ideas much more rapidly than those of the writing section; they did equally well in grammar and almost as well in sentence structure; on the other hand the writing section far surpassed the Combination section in punctuation, spelling and paragraphing. I believe that the interest was greater in the Combination section, but that may have been within the teacher rather than in the pupil.'

"From Springfield, where four teachers used the Program. 'For the last five years we have used, in all the years of our course in English both oral and written themes. Because the programs of all our teachers are too heavy to undertake any increase in written work, we tried the course in which all themes were to be written in only one section.'

The letters just cited were from teachers who carried the Program through the semester. Here are three others from those who went only part way with it:

"From Champaign, from a teacher of second-year English. 'The pupils who tried the experiment last spring are so scattered this Fall among the second-year section that comparison is impossible. This much, however, is true, that I have 20 of those pupils and all are passing, some are doing excellent work.'

"From Decatur, a teacher who had to discontinue the Program. 'It was an absolute impossibility to find the time for the conference work required, the only time which the teachers in our school have for such work being one vacant period during the day and after 3:15 in the afternoon. In my own case, this vacant period coincided with that of less than one-tenth of the students who should have been met in consultation. Then the after-school hour was so often taken by school meetings, etc., the hundred and one things which teachers, especially English teachers are expected to do; that conference time shrunk to a mere fraction of what was really needed. Papers—Bad cess to them!—can be carried home; conferences can not. * * * * * I hope I shall not be thought opposed to oral composition. * * I am its firm friend and advocate. * * * * Here in our own school we worked out a sort of course with our 3d year classes which not only seemed very successful with the students, but was a lessener of work for the teachers.'

"From Jacksonville. 'I had a class of pupils who are commonly known to the teaching profession as those who clog the machinery—a heterogeneous assortment of the halt, the maimed and the blind, as far as English is concerned. With these pupils I combined oral and written work, and although at no point in the course could the work be called inspirational, yet the results were more satisfactory than I expected.

"'I have three pupils who failed in that work last year, members of the class of undesirables I mentioned, who are repeating the work this year. If these are any index of the success of last year's plan, the success was remarkable, for they seem now to be grasping the work intelligently. * * * * Their written work, though still faulty, is greatly improved in fluency, in coherence of thought, and in ability to round off well the thoughts given; on the whole, I am pleased with the evidence of some results from my seemingly fruitless labor of last year.'

"Here is a letter from LaGrange, from a teacher who did not try the Program. 'It is four years since we determined in our school to give two-fifths of the English time to oral English. When we returned from Champaign last fall it seemed like inflicting a hardship to insist on even a single section going back to the old way of one or two themes a week. Our teachers have all had evidence which to them seems quite conclusive, that the pupils improve more rapidly in writing and speaking and the teacher remains more ready for her work when two oral themes are substituted for three written ones.

'By consulting the records of five years ago and of last year, I find the following situation:

Failures in English	1909-10	1912-13
First year	16 per cent	11 per cent
Second year	7.2 per cent	5 per cent
Third year	4.3 per cent	2.1 per cent

In connection with the fact that the standard has been raised this to me means a great deal.

"'The oral theme creates a marked demand for short conferences with the English teachers and for the interest of English teachers in other studies that students are pursuing. These conferences, together with the preparation of outside reading, visiting classes, and taking trips to places of interest, take much less time than the correction of the hundred themes a week which we used to have.'

"Finally, here is a letter from West Chicago, which came in after this report was completed. 'Briefly, I was spared about 2 hours of tedious theme correction each week, and the class which was below the average in natural ability expressed their thoughts much more readily in ancient history than my class of the year before. Then, I had a great many visitors, who remarked about the live interest shown by the children. Another thing which impressed me was the case of a boy who possessed a nervous impediment in his speech. At first his oral themes were painful, but by the end of the semester he could recite for several minutes without stammering once.'

"The experimental Program has at no time been regarded by the committee as a model Program. It was presented as a compromise, designed first and specially to give a comparative test of the Writing and the Combination methods in the hardest semester of the high school course; secondly, to experiment a little with certain sorts of exercises not yet generally employed, at least in first year classes; third, to fit into the existing schedules of many different schools with as little friction as need be. In practice, we are glad to say, it was wisely modified in minor points by many of the teachers to fit their local needs. While the difficulties of the Program, which we all see more clearly now than a year ago, would undoubtedly be found less troublesome if it were used for a second year, we do not at all desire that it be so used. I am inclined to think that it is too hard for first year students, that it contains too much matter and too great a variety of matter. The schedule of exercises, I now see, is not as well arranged as it might be—it is not well, for instance, to have 2 1-2 days per week for composition; rather we might have two days one week and three days the next.

"What we hoped was this: That if the results of the experiment should be favorable to the general use of oral composition as part of the English course, teachers all over the state, alike in large schools and in small, might be encouraged to work out their own programs according to their own needs and possibilities. We must never forget that it is even less possible with oral composition than with written composition to follow absolutely any one text book or any one program made by strangers. If the oral English is to be really alive, each school must construct, gradually, of course, its own plan, and then contrive to keep that plan flexible. Every teacher, every class, every boy or girl, is different from all others. We want no more of the lock-step in this country, either in our business or in our schools.

"Finally, the committee does not believe that either oral composition or written composition should be subordinated in the English work. Both are necessary. Each needs the other, and each, unaided by the other, is as inefficient as one blade of a pair of scissors would be. We do advocate, however, and with earnestness, combination of writing and talking.

"The committee's work is done. The matter is now up to the teachers of the state. Before we leave the subject, however, we venture to offer the following rcommendations, based largely on the report of this experiment.

"1. That oral composition combined with written composition be adopted as a regular part of the English work throughout the high school course,—the proportion of written and oral themes to be, in general in the first year, two-thirds oral and one-third written, the written themes generally to be made from previously given oral themes; in the second year, one-half oral and one-half written; in the third and fourth year, one-third oral and two-thirds written.

"2. That regular allowance be made by the school authorities in the daily session for time for oral conference equivalent to 5 minutes weekly per pupil. With 60 pupils (3 sections to one teacher) this would amount to 300 minutes, or one period daily in the school session plus 100 minutes (1 2-3 hours) before and after school. For 40 pupils (2 sections to the teacher), the time would amount to 200 minutes, and the oral conferences could all be given in the school session with the allowance one period per day. This is not an extravagant demand to make upon the school authorities. But it would relieve the teacher of the greater part of the manuscript correction at home. The result would appear at once to be more vitality and better work on the part of the teacher. The general improvement of the pupils in writing, speech and interest in their studies would soon be noticed by the parents, bring the approval of the school authorities.

"3. That as to the content of the Composition program, the method should be, in the earlier years at least, to say little about rhetorical distinctions regarding the four kinds of composition: Narration, description, exposition and argumentation; but rather through all the forms in a series of exercises planned to fit in with the pupil's natural interest. In the first year, at least, it does not matter whether the boys and girls know the words, narration, description, etc., at all. The point is to keep them thoughtfully interested in a series of real little problems—definite problems, each with a definitely conceived topic—connected with their own life in school and out. These children are as much alive, remember, while in school, as they ever will be (many of them, perhaps, more so).

"The plan of the course, which must be worked out by every school for itself should be systematic but not too rigid. Four suggestions only are offered by the committee:

a. That large use should be made of the group method and group rivalry, especially in the first and second years.

b. That large use should be made of narrative-expository and descriptive-expository exercises (descriptions and explanations, that is, of real objects and familiar processes of daily life) in the first and second years.

c. That large use be made of dramatic and dialogue exercises, particularly in the second and the third years, but also in a simple form in the first year.

d. That esthetic exercises and what are often called, incorrectly, 'imaginative' exercises, ('fancy' narratives and descriptions') should be used sparingly, rather to give variety to the work and by way of reward of special merit in the pupil than as the regular substance of any part of the course.

Respectfully submitted,
John M. Clapp, Lake Forest,.
Florence Skeffington, Charleston.
Leverett C. Lyon, Joliet.
Eva Mitchell, Centralia.
H. G. Paul, University of Illinois,
Committee."

The Report was discussed by Professor Baldwin as follows:

"I suppose that a secretary of any organization is expected to exemplify the ancient precept for the regulation of the conduct of children. He is expected to be seen and not heard. I am sorry to break this rule, for children long ago ignored it, and only the secretaries have kept it in remembrance. Yet it is impossible for even a secretary to remain silent at such a time as this. Even the dumbest of us must have felt his heart burn within him as he listened to Dr. Clapp's ardent and convincing presentation of the results of his investigation. He has done a piece of work that will not only reflect credit upon the Illinois Association of Teachers of English, but which will mark an epoch in the educational progress of composition teaching throughout our secondary schools.

"That such a movement as this which he has inaugurated is sorely needed there can be no question. Our college freshmen when they come here are dumb, and remain in that condition during their four years of residence. Such a condition we have grown to look upon as inevitable, to be accepted as one of the unavoidable difficulties of our work. My observation of foreign students, as I have known them in the Cosmopolitan Club here at the university, has, however, convinced me that speechlessness is by no means the natural condition of youth. Certainly the fluency of the young men of Oriental countries, reared where 'a word fitly spoken' has for uncounted centuries been valued at its true worth, puts to shame our own American youth. A few days ago I listened to an informal talk by two young Hindus upon the ancient civilization of India, and was amazed to hear these young men, speaking upon a subject purely academic, and in an alien and comparatively unfamiliar language, yet present an orderly and interesting exposition. No American students that I know could have done so well, even in their own language—simply because they lack the requisite training.

"That they lack such a training as would enable them to speak naturally and effectively, is entirely our fault. They are dumb because we, their teachers, are dumb. Having to speak without the written word before our eyes reduces us all to a state of abject terror. I do not mind confessing here among friends that at this moment I am myself in a state of perturbation bordering upon panic at the thought that I have not in my pocket even a scrap of paper, to which, should my natural condition of wordlessness become acute, I might in my desperate need refer. Really I find myself unable to share Dr. Clapp's sanguine hope for the future of oral composition, so long as we, the teachers, remain what we are. If we could by some merciful euthanasia be removed, there might be hope. To our removal by so radical a method some objections might be offered by philanthropists, but our students would, I feel confident, offer no opposition. Speaking seriously, I really do not see how our teachers, with their inadequate training are going to accomplish very much. Indeed, I feel like saying with the prophet, 'Lord, who is sufficient for these things?' Still, in spite of my misgivings about the future of oral composition, I heartily endorse Dr. Clapp's conclusion that oral, in combination with written exercises, should be made a part of the high school English course for the whole four years. The results of our experiment certainly justify such a recommendation. Particularly significant, is the report of fifteen out of twenty-eight teachers that the ordinary speech of the pupils in combination sections, showed marked improvement.

"We must not, I suppose, expect an educational millennium at once. Nor must we anticipate that oral composition will solve all the difficulties of composition teaching. Oral composition has its own peculiar perils, not less threatening than those that beset the path of the teacher of written composition. You remember the story in Bunyan's Pilgrim's Progress of Christian's passage through the valley of the shadow of death—that, whereas during the night he was threatened by hobgoblins and satyrs (to say nothing of the mouth of hell that yawned hard by the wayside), his path in the daylight was beset by snares and gins and pitfalls. The snares and gins and pitfalls of oral composition are not less terrifying, I suspect, even when we walk in the light of Dr. Clapp's ideals, than the satyrs and hobgoblins to which we have in a measure become accustomed in the teaching of the written work.

"The worst snare is perhaps that the oral practice will degenerate into a mere training in bluffing. Some scheme must be devised for supplying ideas to the student. For this purpose the rhetoric text-books—even those more recent ones that try to provide for oral work—seem to me ill-adapted. Subject matter of current, perhaps even of ephermeral interest is needed, such as might be supplied by an intelligent reading of the best of the metropolitan dailies. Since we cannot, however, look for an intelligent reading, and since, moreover, the best American dailies are not accessible to the pupils, some such scheme as that which has been adopted by the committee having in charge the interscholastic oratorical contest might be tried. The contestants know that the subjects assigned them for extempore speaking will be taken from the issues, within definitely assigned limits, of three well known periodicals. These journals the student is expected to read, as Bacon said good books should be read, with diligence and attention. The student is not expected to memorize anything; he is expected to depend upon the need of the moment of speaking for the suggestion of the words he shall use. Some such scheme as this I should like to see tried in a course in oral composition, or in a combination course. I would have the teacher go further than the suggestion of the committee that the teacher should not bother the pupil the first year with the forms of discourse. I would have him throw formal rhetoric to the winds, and, instead, give the pupils constant practice in the oral expression of ideas acquired by attentive reading of a carefully selected list of weekly periodicals. This suggestion, it seems to me, should be added as a number five of those of the committee's report."

After some further discussion, the report was accepted, the committee, thanked and discharged.

At the afternoon session, the nominating committee reported the following nominations, which were ratified:

For president,
    Mr. John Crowe of the University High School, Chicago.
For secretary,
    E. C. Baldwin of Urbana.
As members of the executive committee,
    J. M. Clapp of Lake Forest,
    Miss Skeffington of Charleston,
    Miss Mitchell of Centralia,
    L. S. Lyon of Joliet,
    Miss Wilcox of Springfield.
    H. G. Paul of Urbana,

Mr. Gordon of Rockford,
C. H. Woolbert of Urbana.

As delegates to the meeting of the National Council of Teachers of English.

W. W. Hatfield of Chicago,
J. M. Clapp of Lake Forest,
Miss Atwood of LaGrange

The reading and discussion of papers was then resumed. Mr. C. H. Woolbert read a paper upon the subject, How can we improve our work in oral composition in the high school? The paper follows:

"It is the solemn duty of every teacher to regard his subject as the most important in the curriculum, and I have no wish to violate any of the rules of the game. So I am spared at the outset any necessity for a detailed defense of the value of public speaking; I grant my own point. Oral English, then, for the moment at least, is the most important study a boy or girl can engage in. In the other section meetings other most important subjects are being discussed; why not have one of our own? I am sure I cannot commit an unpardonable sin in standing up for my own house. Those who know I am wrong will please pardon my heresy and will hear me with tolerance if not with patience.

"Oral English as such is comparatively new to the high school. Two decades ago such instruction in the subject as was given, was largely sporadic and without definite direction. Of late, however, whenever English teachers get together, Oral English agitates the surface of the waters and will neither find nor give rest. In my judgment, of course, this is exactly as it ought to be. For a new subject, as important as this, surely ought to occupy our best thought and endeavor. So we are ready to ask, What is the most vital consideration right now in the problem of Oral English in the high school? What suggestions can be offered to strike most nearly at the heart of any difficulties that may exist?

"Like every new subject, Oral English suffers from the lack of men and women adequately trained to teach it. This is my text. Time was when physics, chemistry, botany, civics, even the languages and history, suffered from the same ailment, lack of properly prepared teachers. English in general is now fairly convalescent from this affliction; but oral English is still under the physician's care. For years one of the greatest obstacles in the path of effective teaching of literature and composition was the notion in the minds of superintendents and school boards that 'anyone can teach English.' All high school teachers from colleges of any standing at all had had a course in English, possibly as many as two or three; besides didn't they speak the language? Then why bother about the teaching of English? the problem really solved itself. Such was the logic used. After the superintendent had chosen specialists for mathematics, the sciences, the languages, and even for history and civics, all too often after studying his schedule to see who had a vacant hour or two, he then parcelled out the courses in English. Teaching English was once a form of cruel and unusual punishment. But this is happily changed. We have learned that the teaching of English demands more of natural aptitude plus adequate training than any other subject in the curriculum. That is another point that needs no argument; we modestly grant it. We have joined the ranks of experts.

"But, we are sorry to record, the same is not true of oral expression. If English demands of teachers special characteristics and training, so oral English demands a special kind of English teacher and a special kind of English training. I have a well-developed suspicion that in some high schools in Illinois—I know it to be true in Michigan—oral English is now parcelled out among the English teachers in much the same way that rhetoric was once thrust upon the whole faculty. And I am haunted by the fear that there are even teachers of English who believe that anyone who speaks the English language correctly and is prepared to teach rhetoric and composition is also prepared to teach public speaking. In fact, I know of cases, and enough of them, to warrant me in the charge that the greatest need in the teaching of oral English right now is for English teachers to forget the fallacy that a special subject can be taught adequately by anyone but a specially prepared teacher. And if perchance we have among us the one who says, 'Oh, what's the use anyway! oral Expression doesn't amount to much; let's get it off our hands with the least possible strain and save our strength for something worth while,' we can simply clasp hands and pray; for by our fruits will be known.

"Now, if what I say does not apply to you and your school, if you are of the elect, please do not despise my doctrine for that reason; just sit tight in your distinction. It is a delight to record the advances made in some of our most progressive high schools in supplying themselves with trained teachers of public speaking. It will be a happy day for those interested in the spreading of proper speech methods, when the school where oral English is either not taught or is taught apologetically will be the exception rather than the rule.

"Just for a moment let us ask why oral expression in many places is on the defensive. One of two charges is likely to lie against training in oral work, whether in high school or in college; on the one hand, that it is too ornate, impractical, too nice, too much lacking in bone and sinew; or, on the other hand, that it is too wooden, inane, uninspired, juiceless. Analyze these two objections and you will find that they can be summed up into the charge that oral expression has not yet found a happy medium, that it tends to run to extremes, that it has not yet come into its own. I have no alternative but to lay the blame for this to inadequacy of preparation in those who teach the subject. It is my firm conviction that there is vastly more of oral talent in the ordinary boy or girl than most of us suspect, if we only know how to bring it out. Obviously, this is a problem in the competence of teachers.

"Someone by this time is asking mentally, 'Well, who is to blame for that?' And I have no difficulty in following your logic and in laying the blame where it seems to belong. The fault, such as it is, lies at the feet of those whose responsibility it is to get the high school teacher ready for his task. I stand with my fellows at the bar to show cause why we should not give the high schools better prepared teachers of our subject. I have no qualms or squeamishness in the matter; without hestitation I say that if there is inadequate teaching of oral English in the high school, the blame must be placed largely upon men in colleges and universities who prepare their students to go out and teach the subject.

"This raises the question, then, When is preparation for the teaching adequate and when is it not? The question is not an easy one. The fact is that teachers of the subject themselves are not of one accord yet. We still have schools and cults. As a consequence we lack authoritativeness and authority. But the light is breaking: we have laid the old-fashioned 'yellow-cution' safely to rest; we are not content with teaching boys and girls merely to speak pieces; we are a unit in agreeing that the connection between intelligent thought and sound vocal methods is unbreakable and inescapeable; we realize that with most learners the organizing of material is of at least equal value with good expression; we try now to turn out students who can stand up in public and give adequate expression to the faith that is in them; we even are willing to see our output go into humble places to do the world's every-day work, and count it no failure if the landscape does not tip wherever they happen to walk; we have brought the subject down from Olympus and made it walk with men. But we have some things to learn yet.

"Let me briefly outline the problem that confronts the teacher of public speaking, and then we can see what requirements a trained teacher must have. The first problem in oral English is to determine what it is for. Why train boys and girls in speaking? Here is a reason we can scarcely go behind; *oral expression is for the purpose of carrying truth.* But, some one objects, do you mean to insinuate that truth needs to be supported by mere elocution or vocal tricks? Is not an idea worth just as much presented one way as another? Is it not weighty in its own substance? Let me hasten to reply—I like to enforce this doctrine—truth, mighty as she is, always needs support. Almost never does she proceed in her own strength alone. Without aid, she limps, she goes upon a crutch, she even falls by the wayside unnoticed while falsehood and error, with swelling port, strut magnificently by. In the play 'Everywoman' Truth appears as an old hag, limping on a staff, hunch-backed and ugly, beloved only of Nobody. The allegory is excellently conceived. How it vexes our souls at times when we see our own glorious truth stamped into the mud by the feet of the unthinking! Our pearls of wisdom are trodden under the ruthless hoofs of ignorance and prejudice. Grievously are we pained at the stubbornness of those who will not see the light we shed.

"But light will not carry far without proper setting; a candle under a bushel cannot shed its beam upon a darkened world. A good lens, and also a shining reflector, availeth much. Merely to state a fact in the form in which it comes to the mind or in any chance tone of voice, is to run the risk of seeing your truth utterly ignored. When we deal with the written truth we are very scrupulous in looking to our composition; we take pains with our rhetoric; we watch our syntax with exceeding great care. We know well enough what will happen if we do not; what we write goes into the waste basket, is passed over by the one we hoped might read and learn. Not a one of us for an instant would question the value, nay, the inescapable necessity, of care in the use of proper methods of choosing and ordering our words in giving written expression to our truth.

"So with oral expression. The finest truth in all the world spoken in a monotone, or with faulty slide, or at a uniform rate, or with senseless pause, or with defective enunciation and pronounciation, falls only on deaf ears. As the eye will automatically pass over what does not attract its attention according to definite psychological laws, so the ear will fail to transmit to the brain what does not accord with natural laws that govern hearing. It is practically impossible for the ear to catch the meaning from monotone. There is no meaning there to catch; not for the ear. The eye might comprehend it on paper, but the ear is helpless in the face of faulty vocal methods.

"Now I have a suspicion that I know what is uppermost in the minds of some. You are saying, Does this man stand here and argue for the cultivation of the mere tricks of the elocutionist? I answer; I do, most emphatically, if by 'tricks,' you mean sound vocal methods based upon incontrovertible laws of human hearing. I do not blame some men for their fear of vocal tricks. Charlotte Cushman used to consume a half hour in giving the Lord's prayer, and report hath it that she melted perfectly good men and women to tears. But she could not do it now, not with us. Time was when to go to an 'elocutionary entertainment' was to be dragged through puddles, even ponds, of lachrymose gush and into cyclones of violence and noise. Vocal tricks were the whole show. I think I can understand why it is that some men look upon vocal competence as an affliction to be shunned as the plague. I have even found men who have so studiously avoided honest vocal methods that they have seemed to think that the only way to escape being charged with charlatanism is to be as ineffective in speech methods as possible. To save their reputations they have even knocked the crutch out from under truth and have left her sprawling. But they have escaped the dreaded charge of being vocal mountebanks.

"In all good sooth is there not a happy medium? I think there is. Yet to enforce the truth, we must use the devices of sound elocution. The man or woman who is to teach others how this is done, must be trained in the art he wishes to transmit. Hit or miss is no more welcome here than in the teaching of composition and rhetoric. There are rules to be learned and mastered; practice here makes perfect as in writing; the ability to criticize vocal methods intelligently, is just as necessary as ability to correct them. No, not every successful teacher of oral English must be a great speaker, but he must be at least potentially competent; he must have at his command the governing principles, and ought, unless he is a remarkable exception, to be able to use example to good effect in his teaching. Precept and example—knowledge of the rules and ability to show them forth—these are the minimum requirements that ought to be accepted for the teacher of oral English.

"Here is a test of competence for teaching the subject: Can you actually tell what is defective in a pupil's speech, and can you prescribe the right remedy for it? Can you hear a boy or girl through the oral recitation and give genuinely helpful advice as to what to do next? Have you got beyond the stage of merely 'seeking on' the neophyte without pointing to game? Can you bring a class to the point of conversing with you in terms of speech methods? Can you translate ideas and sentiments into terms of slide and rate and quality and volume? If the teacher cannot answer these in the affirmative, I wish to ask, in all meekness and gentleness, what right has such a one to attempt to teach the subject? What should we think of a teacher of rhetoric who did not know good or bad coherence when he saw it, who could not decide when a theme was unified or not, and who could not talk in terms of syntax, emphasis, clearness, and force? Yet there be those who teach oral English who find it difficult to use the nomenclature of expression and its attendant meanings with no greater accuracy than this. Yes, of course, these are they who have been drafted for the task just to make things go; they are guiltless often of any desire to teach 'the horrid stuff,' as one teacher characterized it to me. Yet they furnish the support to my text: the greatest need in oral English is the specially-trained teacher.

"Have I answered the question? Not specifically. Let me detail a few points, then. Home base here is the college and the university. If we do not furnish the properly prepared teachers, the high school surely cannot be expected to give adequate instruction. The colleges must come to an agreement as to the place and function of public speaking and then must make competence a requirement upon prospective teachers. Personally, I have a well-defined conviction that expression should be required of every candidate for teaching English. Maybe this is where I show my leaning toward the superiority of my own subject. If so, please forgive me; I am still unwilling to be an exception to the rule. But experience has taught me that when a teacher can give adequate oral expression to the literature he teaches, or can use precept and example upon the truth aimed at the ears of listeners, he possesses a heavy advantage over those who cannot. Then, too, the high school can have a hand; it can shoulder its burden by giving oral English an adequate place in its curriculum and on its salary roll. Give the teacher of public speaking and expression all the dignity and pay his good sense deserves. If your first trial yields you only a curfew-shall-not-ring declaimer, try again. Make a search for a teacher who can combine sense and sensibility; they are extant and can be had—for the price.

"Give oral expression a chance to be something more than a stop-gap to awkwardness; make it something better than an antidote for bashfulness. Regard it as more important than an attempt to raise the fallen and cheer the faint. Have an eye and an ear for the artistic possibilities of speech. The high school age is the very best in which to crystallize warmth and color into the lives of the coming man and woman. Yet all too frequently the college freshman has lost the bloom of sweet enthusiasm. Oral English is about the best study in the category for saving this. Once lost, it almost never returns; and yet it is a priceless possession.

"Of course, I could fill much more time with wise and weighty recommendations, which would be either commonplaces or too extreme for your particular case. Encourage the strongest boys and girls to cultivate good speech methods, appeal to their desire for leadership, encourage in every way the discussion of current issues, make it easy for them to take part in the speaking contests of the school, be sure to furnish adequate library facilities, encourage the literary society—those who are not already doing so, join a debating league, send a representative to the interscholastic district contests. All of these you have heard before; some of you are carrying through all of them; yet they are worth offering to the consideration of all.

"One practical recomendation, however, can be emphasized, and it touches bottom. Some of you have been thinking it; let me say it out. Catch them young; begin in the grades. Yes, this is a problem for the superintendent rather than the high school officer. It brings us right back to the same problem of competence among teachers, but it is obvious that there will never be the fullest realization of speech possibilities in the output of our schools until the grades have taken up the task and begin on the boy and the girl before slouchy and ineffective habits have become irremoveable. Begin at the beginning. Make the reading lesson an exercise in intelligent expression. I have three children in school; they have been under seven teachers in all; and every last teacher of the seven has allowed the lesson in reading to be nothing but a groping for words. All three of the children read like educated mutes or wooden Indians. The high school teacher can at least drop the right hint in the right place and with the right degree of emphasis. Try a little proper elocution on your superintendent. You have truth with you. Dress her up and send her on her mission.

"If there is a weakness in the methods of teaching oral English in the high school, obviously it must be corrected at the source. Blame the college; we must stand it. Also give us help; we can stand that too. All progress, we are told, comes in spirals. Maybe some day we can establish a happy little spiral that will keep us moving on and up with the least possible friction and waste of effort. College and normal school will turn out prepared teachers of speech methods; the grades and the high school as a consequence will send us boys and girls with better preparation; the college can make them more competent than were their predecessors; and the new output in turn will go forth to raise the spiral one plane higher. Possibly in this we are forecasting a small section of the millenium; but dreams are good for the most matter-of-fact of us; and sometimes dreams do come true. In the case of this one, who knows? Anyway, wouldn't it be glorious!"

In the absence of Miss Laura Sedgwick, Principal H. V. Church of the J. Sterling Morton High School presented a report upon an experiment in making every teacher a teacher of English. This paper was followed by a general discussion. Professor Clapp then moved that a fee of 25 cents, to be called a membership fee, be collected annually from each member of the Association. This motion was seconded and passed. The session then adjourned.

E. C. Baldwin, Secretary

GEOGRAPHY SECTION.

Minutes of the meeting. Nov. 21, 1913.

Meeting called to order by the Chairman. Minutes of last meeting read and approved. Lots were drawn to determine the periods of service of the members of the executive committee and who should drop out. Result as follows:—Cox 2 years, Clem 2 years, Ridgeley 1 year, Rich 1 year, Weller to drop out. Mr. James H. Smith of Austin High School, Chicago, was elected for a term of 3 years.

Mr. Frank W. DeWolf outlined the plans of the State Geological Survey in connection with the proposed Educational Bulletin on the Geography of Ilinois.

Mr. Harry M. Clem of Marshall High School, Chicago, was elected to represent the Geography section in the proposed committee on a course in general science.

An outline of the aim and scope of the proposed Physiography syllabus for the State of Illinois, presented by Dr. Rich, chairman, was followed by a presentation of the detailed outlines of the work of each of the sub-committees by their chairmen, H. M. Clem, (acting for Jas. H. Smith of Chicago) Lydia M. Smedley, and Clarence Bonnell.

Moved and carried that the section adopt the plan of the syllabus as recommended by the committee. The essential points included under this motion are as follows:—

1. That the order of topic, and time allotment to each be as follows:—The Land, 18 weeks; Earth Relations, 3 weeks; Atmosphere 13 weeks; Oceans 2 weeks.
2. That "The Land" should come either at the beginning of the course, in the middle or at the end as may be required to bring it within the field season, so that field trips may be taken.
3. That strong emphasis be laid upon field and laboratory work, especially on field work.
4. That strong emphasis be placed upon human relations, and that these be intimately interwoven with each topic as it is presnted; not segregated at the end, either of the course, or of the major topics considered.
5. That field and laboratory work in the syllabus be in the form of suggestions rather than of explicit directions.
6. That the committee does not recommend the half year course in physiography, believing that the time is too short for a proper presentation of the subject.
7. That in schools where the half year course is necessary, the committee recommends the following allotment of time:

   The Land 9 weeks; Earth Relations 2 weeks; Atmosphere (with ocean currents introduced in connection with winds) 7 weeks. That Oceans be omitted from the half year course.
8. That Lakes be treated in connection with other topics—i. e., that floodplain lakes should come in connection with the treatment of rivers; glacial lakes in connection with the treatment of glaciers, etc.
9. That in so far as possible the work be adapted to Illinois conditions.

Afternoon Session.

The first part of the afternoon session was devoted to a discussion of minor details in connection with the syllabus, lists of apparatus, model field outlines to be added to the syllabus, etc.

Moved and carried that the report of the syllabus committee be accepted and that the syllabus be turned over to a publication committee consisting of the chairman and of the heads of the three sub-committees.

The following resolution was then passed:

"Resolved by the Geography Section of the High School Conference that it is the sense of the members of this section that courses in Geography be offered by the University of Illinois during the summer term each year."

The result of the lot and election to determine executive committee of the Geography section was as follows:—

Flemin W. Cox, (to serve for 2 years). Term expires Nov. 1915.

H. M. Clem, (to serve for two years). Term expires Nov. 1915.

D. C. Ridgley, (one year). Term expires Nov. 1914.

J. L. Rich, (one year). Term expires Nov. 1914.

Miss Annie L. Weller was dropped out and in her place James H. Smith of Austin High School, Chicago, was elected for a term of three years. Term expires Nov. 1916.

J. L. Rich was elected chairman for the coming year.

Proposed Physiography Syllabus for the State of Illinois.

Introduction.

This syllabus has been prepared by a committee of physiography teachers in response to a resolution adopted by the Geography Section of the High School Conference at its meeting at Urbana in November, 1912. An insistent call for such a syllabus, coming from teachers from all parts of the State, was in part responsible for the resolution. During the preceding year, 1911-1912, a committee under the direction of the Geography Section of the Conference undertook a survey of the actual conditions of Geography and Physiography teaching in the High Schools of the State. This survey revealed the greatest diversity in the presentation of the subjects. There was no agreement as to the subject matter to be included, the method of presentation, the relative place to be given to laboratory and field work, or the time allotment. The Survey revealed further that a majority of those teaching Physiography in the High Schools have had no special training in the subject and that many have their major interest along some other line.

This condition made it especially desirable that a well-organized syllabus should be prepared by a representative body of teachers—this syllabus to serve the double purpose of helping to unify the teaching of Physiography throughout the State, and of assisting the large number of teachers who every year find themselves called upon to take up the subject without the advantage of previous special preparation.

The syllabus committee was made up of 9 teachers from widely scattered localities, representing, as nearly as possible, all sections of the State and all types of schools. The general plan of the syllabus and its content of topics was determined by vote of the entire committee. Details were filled in by three sub-committees of three members each.

The syllabus is in no sense a manual to be followed rigorously. It is intended to serve, rather, as a helpful and suggestive guide, outlining a good course in the subject, and at the same time leaving the teacher free to expand or to abbreviate as his inclination or the circumstances may dictate.

The material has been arranged in 4 parallel columns:—Recitation, Laboratory, Field, and References. Major topics are set off by horizontal rulings, and minor topics by spacing.

The Syllabus is intended to cover a year's course of 36 weeks—the time to be allotted as follows: The Land, 18 weeks; Earth Relations, 3 weeks; Atmosphere, 13 weeks; Oceans, 2 weeks. The committee recommends that the order of topics be as above except that "The Land" should come either at the beginning of the course in the middle or at the end, as may be required to bring it within the field season so that field trips may be taken while that topic is under discussion in the class room.

The committee does not favor a half year course in physiography, believing that the time is too short for a proper presentation of the subject. It has not, therefore, prepared a separate syllabus for a half year course. In schools where the half year course is necessary, the committee recommends the following allotment of time: The Land, 9 weeks; Earth Relations, 2 weeks; Atmosphere (with ocean currents introduced in connection with winds), 7 weeks. They recommend that the topic of "Oceans" be omitted from the half year course. "The Land" in the half year course, as in the full year course, should come either first or last as may be required to bring it within the field season.

"Lakes" are not given separate treatment. The committee recommends that their consideration be woven in with other topics in connection with which lakes are encountered; i. e., flood-plain lakes should come in connection with the treatment of rivers, glacial lakes in connection with glaciers, etc.

Shore line forms are treated under oceans.

The syllabus gives a prominent place to field and laboratory work. The committee cannot emphasize too strongly the need and value of field work. In no other way can as clear a conception of the forms studied be given. Nor is it necessary to go far afield for available material. Every exposed clay bank or earth pile, for instance, may display the essential features of river work as clearly as the largest stream, and on a scale much easier to comprehend.

The bearing of physiography upon the life of man should be given the prominence which it deserves, and, as the committee believes, should be intimately woven in with each topic as it is presented—not segregated at the end, either of the course or of the major topics considered.

The use of photographs for illustrative purposes is strongly recommended. Photos may be cut from magazines, railway folders or other sources and mounted on cards, either singly or in groups for class-room use.

Under each topic references to a number of books are inserted with the idea that if any particular book is not available corresponding material may be gained from other sources. It is not intended that the pupil shall read all the references mentioned, though references should be used freely by both pupil and teacher.

Two sample outlines for field trips are appended at the end of the syllabus proper. They illustrate the sort of work which may be done on such trips, and show a method of guiding the pupil's observations, which has been found to succeed in practice.

The maps and folios published by the United States Geological Survey may be obtained at nominal cost from the Director of the Survey at Washington, D. C. The Survey has recently offered to co-operate with teachers in selecting lists of maps to illustrate any desired topics. Blank weather maps may be obtained from most Weather Bureau stations or direct from the department at Washington. References to other maps are given in the body of the syllabus.

John L. Rich, University, Chairman.
Wm. E. Andrews, Pana,
Clarence Bonnell, Harrisburg,
Harry M. Clem, Marshall H. S., Chicago,
Flemin W. Cox, Lawrenceville,
Altha Haviland, Savanna,
D. C. Ridgley, Normal,
Lydia M. Smedley, Joliet,
Jas. H. Smith, Austin H. S., Chicago,
Annie L. Weller, Charleston.
Committee.

PROPOSED PHYSIOGRAPHY SYLLABUS FOR THE STATE OF ILLINOIS.

KEY TO REFERENCES.

Abbreviation	Title.	Author.	Publisher.
A. B. C. M.	Physiography for High Schools.	Arey, Bryant, Clendenin and Morrey.	D. C. Heath & Co.
Davis	Elementary Physical Geography.	W. M. Davis.	Ginn & Co.
Dryer	High School Geography.	Charles R. Dryer	American Book Co.
Hopkins	Elements of Physical Geography.	Thomas C. Hopkins	Benj. K. Sanborn & Co.
Salisbury, Br.	Physiography for High Schools.	Rollin D. Salisbury	Henry Holt & Co.
Salisbury, El.	Elementary Physiography.	Rollin D. Salisbury	Henry Holt & Co.
S. B. T., Mod.	Modern Geography.	Salisbury, Barrows and Tower	Henry Holt & Co.
S. B. T., El.	Elements of Geography.	Salisbury, Barrows and Tower	Henry Holt & Co.
Tarr.	New Physical Geography.	R. S. Tarr	Macmillan & Co.
Herbertson	Man and His Work.	A. J. and F. D. Herbertson	Black.

Recitation	Laboratory	Field.	References.
EARTH RELATIONS (3 Wks)			
I. The Sun 1. The Center of the solar system. 2. Distance from earth. 3. Economic effect. a. Light. b. Heat.			The Solar System A. B. C. M. Chap. IV. and Hopkins, Chap. II. are especially detailed. All texts are good.
II. The Planets 1. Names in order. 2. Distance from sun of nearest and most remote planet. 3. Diameter of largest and smallest. 4. Longest and shortest period of revolution. 5. Satellites.		Observe the brighter planets as morning or evening stars. (Almanacs and astronomical journals give data; also the nautical almanac, free from your congressman.) If possible, observe some planets with a telescope. Some of Jupiter's satellites are easily seen.	The Planets A. B. C. M., and Hopkins are especially detailed. S. B. T. Mod. 4. Monthly sky map, 150 Nassau St., New York City. $1.00 per year.
III. The Earth 1. Form, with proofs. 2. Size. 3. Distance from sun, moon, and stars. 4. Rotation.	Become familiar with parallels and meridians, latitude and longitude, by using maps and globes. Write answers to stated questions.	Observe the shape of the earth's shadow during the lunar eclipses. Observe the effect of sunshine and shade upon the	The Earth All texts are adequate for general treatment.

Recitation	Laboratory	Field	References
a. Day and night. Effects of day and night upon life and upon business. b. Time (noon, and how determined).	On outline map of U. S. show standard meridians and standard time belts. A representation of the angle of sunbeams at different latitudes may be used to show varying heating power of the sun's rays.	growth of grass, flowers and other vegetation. Determine noontime by length of shadow. Repeat at different seasons.	Form. Consequences of size and shape, Davis, 4, 5; S. B. T., 11, 12. Rotation. Effects upon life. Davis, 7, 8; Dryer, 12, 175 9-10; S. B. T., Ed., 12-13. Time. Dryer, 15.
5. Longitude. a. Meridians and their use. b. Standard time. 6. Latitude. a. Parallels and their use. b. Effects of latitude on temperature.	Use Gardener's or other season apparatus if available. Represent graphically length of day and night: At different latitudes; at different times for a given latitude.	Section lines follow parallels and meridians. Locate the section lines which are nearest your schoolhouse. Observe the altitude of the sun at noon from month to month. (Note length of shadow of a post, of a porch, or window casing.)	Longitude and Latitude For detailed treatment, A. B. C. M., Chap. II; Hopkins, 24-28.
7. Revolution. a. The Seasons. Causes. (1) Difference in inclination of the sun's rays. (2) Varying length of day and night.	Determine the sun's noon altitude at time of equinoxes and solstices. Curves of temperature insolation.	Observe and record the time of sunrise and sunset from month to month and the compass point at such times.	The Seasons All text books are sufficiently complete. Math| Geog., Johnson; Astronom. Geog., Jackson.

Recitation	Laboratory	Field	References
THE ATMOSPHERE (13 Wks) I. Nature and functions. 1. Composition. 2. Relation of different constituents to life. 3. Weight, density and height.			The Atmosphere Nature and functions, S. B. T., El., Chap. IV; S. B. T., Mod., 27. Relation of different constituents to life. S. B. T., El., 42-52; S. B. T., Mod., 29-32; Salisbury, Br., 328-332; A. B. C. M., 67-72. Ele. Meteorology; Waldo.
II. Temperature of the air and its distribution. 1. Importance of heat.	Demonstrate the expansion of solids, liquids, and gases when they are heated.		Temperature of the air and its distribution. Importance of heat. S. B. T., El., 55.
2. Measurement of temperature — the thermometer.	Explain the construction and working of the thermometer.		
3. Source of the heat of the air.	Have the pupils use the thermometer. Compare the readings.		
4. Insolation and its distribution. a. Factors determining distribution. (1) The shape of the earth. (a) Temperature is	Compare areas covered by a beam of light (and heat) projected upon a globe at the equator and near the poles. Project the light through a tube 2 feet long, and having the same diame-		Insolation. S. B. T., El., 57-60; S. B. T., Mod., 35-37; AB. C. M., 82-83. Shape of the Earth. Dryer, 175; A. B. C. M., 80-85; S. B. T., El., 58; Davis, 29.

Recitation	Laboratory	Field	References
highest where the sun's ray is vertical, decreasing in all directions from this point.	ter as the objective of the lantern.		Rotation. Dryer, 175-180; A. B. C. M., 7. Revolution. Dryer, 175-180; A. B. C. M., 81-85; S. B. T. Mod., 41-42; Tarr, 239-240.
(2) Rotation of the earth. (a) Succession of day and night. Daily range of temperature. (b) East west belts of temperature extending around the earth. (c) Isotherms and isothermal maps. (3) Revolution of the earth, including inclination and parallelism of the axis. (a) Alternate north and south shifting of belts of temperature. The seasons. (b) Annual range of temperature.	Plot a curve showing daily range of temperature. On an isothermal map study and explain the general directions of isotherms. Plot curves of annual range of temperature, showing, a. Influence of Latitude. b. Influence of land and water.		Unequal Distribution. S. B. T., El., 63-64, 67-70; S. B. T., Mod., 40, 44-45; Salisbury Br., 337-341; Salisbury, El., 230-233; Tarr, 237-241; A. B. C. M., 84-85.

Recitation	Laboratory	Field	References
(c) Variations in the length of day and night. (4) Unequal distribution of land and water. (5) Belts of Temperature, equatorial, temperate, polar.			Belts of Temperature. Dryer, 180-181, Fig. 162; A. B. C. M., 150-157, Fig 69; Salisbury Br., 446-448; Salisbury, El., 310-312.
III. The Moisture of the Air. 1. The presence of moisture in the air. 2. Sources of moisture. 3. The quantity present. 4. Geographic distribution of water vapor. 5. Hygienic effects. 6. Condensation. 7. Precipitation. a. Kinds. b. Cause. c. Distribution. d. Value of rainfall.	Determine the % of humidity a. in the schoolroom. b. Out of doors. (Laboratory Exercises in Physiography, by Smith, Stahl & Sykes, pp. 25-27.) By means of the calorimeter determine the dew point on different days. With a rainfall map study the distribution of rainfall in the U. S. Make a graph showing monthly and annual rainfall in climatic regions of the U. S. Show that expansion produces cooling. Produce clouds by using exhaustion apparatus.	Observe and explain the different periods of time required on different days for roads, clothes, etc., to dry. Observe and explain the effect upon the human body in summer and winter, a. When the air has a high per cent of moisture (damp) b. When the air has a low per cent of moisture (dry). Observe clouds form and disappear (evaporate). Learn to know the principal kinds of clouds by name.	Moisture. Economic and hygenic. S. B. T. El., 84, 88-92; S. B. T. Mod. 56, 58, 60. Effect of Dew, frost, fog, and clouds. S. B. T. 92-95, 97-98; El. S. B. T. Mod., 62, 64, 65; Dryer, 198.

Recitation.	Laboratory	Field	References
	Demonstrate condensation of vapor by cooling.		
IV. Pressure and Winds. 1. The barometer. 2. Belts of high and of low pressure. 3. Wind belts. 4. Periodical winds. a. Monsoons. b. Land and sea breezes. 5. Ocean currents.	Air pump experiments. Air pressure shown by long tube, water, and stopper. Convection apparatus. Map the belts of high and of low pressure. Map the wind belts of the earth. In the belts of trade winds compare the general direction of winds with that of ocean currents.	Observe many examples of difference in pressure causing air currents, e. g., open valve of steam engine, air brakes, open valve of bicycle or automobile tire, compressed air tubes, vacumn sweepers, etc.	Winds. S. B. T. El.; S. B. T. Mod.; and Salisbury, Br. give the best treatment on winds. Economic importance. S. B. T. El., 111-112, 114, 313-320. S. B. T. Mod. 51, 72-73, 75, 76, 201-205; Dryer, 135-138, 192, 311. Ridgley, General Circulation of the Atmosphere.
V. The Weather. 1. Elements of weather. 2. The Weather Bureau. 3. The weather map. a. Explain the symbols used.	Convection currents experiments. Keep weather record for a month. Study weather maps, writing answers to definite questions. Construct weather map of U. S. if time permits.	If possible visit a station of U. S. Weather Bureau. Make appointment in advance. The instruments will be explained. This is a very instructive lesson for the class.	The Weather. S. B. T. El., Chap. VIII, rich in details. S. B. T. Mod., VIII, same topics in briefer form. Salisbury, Br., 424-430; Salisbury, El., Chap. XVII.
4. Cyclone. a. Temperature rising. b. Air light.	Study cyclone and anticyclone, using weather maps, and writing answers to questions.		Cyclone. See reference above under Weather.

Recitation	Laboratory	Field	References
c. Air rising. d. Winds near the earth moving spirally toward the center. e. Sky usually cloudy. f. Precipitation likely to occur. g. Cyclone moves eastward. (give rate.) Make a clear distinction between the movement of the air within the cyclone and the progressive movement of the cyclone as a whole.			Influence on weather. S. B. T. El., 196, 206. S. B. T. Mod., 90.
5. Anti-cyclone. a. Temperature falling. b. Air heavy. c. Air falling. d. Winds moving spirally away from the center. e. Sky usually clear.			The Anti-cyclone. See above under cyclones.

Recitation	Laboratory	Field	References
f. Precipitation not likely to occur. g. Anti-cyclone moves eastward (give rate).			
6. Forecasting of the weather. 1. Use weather maps with the forecast removed. 7. Thunderstorms. 8. Tornado. 9. Tropical hurricane.	Using a U. S. weather map, practice forecasting until the elementary principles of forecasting are clearly understood.		Forecasting. See cyclone above, also S. B. T. Mod. 93. Hopkins, 389-390; Dryer, 206. For Teachers: Meteorology, Moore. Meterology, Milham. Ele. Meteorology, Davis. Chicago Climate, Cox and Armington. (To be published soon.)
VI. Climate. 1. Name the elements of climate. 2. Climate of the equatorial belt. a. Temperature. b. Winds and calms. Upward currents. c. Rainfall. d. Vegetation. e. Habits and occu-	Using rainfall and vegetation maps, study the influence of rainfall upon vegetation.		Climate. S. B. T. El., Chapters IX, Tropical; X, Temperate; XI, Polar; S. B. T. Mod., Chapters IX, X, and XI; Dryer, Chap. XV, and Fig. 188; A. B. C. M., 148, 159. Herbertson, Man and His Work, Chap. V. **Effect of climate on civili-**

Recitation	Laboratory	Field	References
pations of the people.			zation. Dryer, 221.
3. Climate in the trade wind belts. a. Location. b. Temperature. c. Direction and velocity of the wind. d. Rainfall. e. Great deserts. f. Commerce. g. Coastal and interior.	With rainfall and wind maps, study the influence of elevation upon rainfall on windward and on leeward coasts. Locate and explain the great deserts of the world.		Effect of climate on Vegetation. Dryer, Chap. XVI, "Plant Regions". Tarr, Chap. XVII and pp. 384-387. Ridgley, Vegetation Zones of the Earth. Herbertson, Mann and His Work, Chap. III, **IV.**
4. Climate in the horse latitudes, or tropical calm belts. a. Location. b. Winds and calms. Downward currents. c. Rainfall.			
5. Climate in the westerly wind belts. a. Location. b. Direction of wind. c. Cyclones and anti-cyclones. d. Rainfall.	Compare the rainfall on the west coast with that of the east coast. Explain difference. Compare rainfall on the coast with rainfall in the interior. Explain.		

Recitation	Laboratory	Field	References
e. Marine and continental. 6. Climate in polar regions.			
7. Climatic regions of the United States. a. Woodland. b. Grassland. c. Desert. d. Farmland.	With aid of an atlas such as Longman's New School Atlas, map the woodland, grassland, and desert regions of U. S . With an atlas map the agricultural regions. A series of pictures showing typical plant and animal life in its natural surroundings is very helpful. These should show as many types of climates as possible.		Climatic regions of U. S. A. B. C. M., Chap. XIV; Dryer, Chap. XVI, XXIII-XXVIII. Climate—Ward. Herbertson, Man and His Work, Chap. II.
THE LAND (18 Weeks) I. Earth materials (1 wk.) 1. Mantle rock. a. Materials. b. Soil. Origin. Types. Soils of United States.	Become familiar with common kinds of mantle rock, such as clay, sand, gravel and marl. Consider such points as: color, shape, size and hardness of particles. Find out whether the material is pervious or impervious.	Study the mantle rock of region. Find if possible a cut. Consider such points as: depth of cut, kind of material, arrangement of material, and use of material.	All Physiography Texts. For Teachers:— For Field study select:— Mantle and Bed Rock Studies from Bulletins of Illinois State Geological Survey. The following may aid in the study of the home region:—
2. Bed rock. a. Material.	Become familiar with common kinds of bed rock.		Bulletin 7, The Physical Geography of the Ev-

Recitation	Laboratory	Field	References
b. Economic importance of coal, petroleum, cement, stone, etc. 3. Common rock and minerals. a. Names. b. Characteristics.	Make a laboratory study of common rocks and minerals, Howell's collection is satisfactory for this work. If such a collection is not at hand, a teacher may secure from exposures of glacial drift an effective working collection.	Study the bed rock of the region. Study kind of material, arrangement, joint and bedding planes, weathered condition of material. Find if possible the economic importance of the bed rock of the region. Have pupils make personal collections of common rocks.	anston-Waukegan Region. Bulletin 11, The Physical Features of the Des Plaines Valley. Bulletin 12, Physiography of the St. Louis Area. Bulletin 13, The Mississippi Valley between Savanna and Davenport.
II. The Wind. (1 week) 1. Erosion. Sand-blast action. Scouring of rocks. Fantastic forms produced. Importance of wind erosion in arid lands. Blowing of soils, etc.	Pictures showing wind-eroded rocks may be easily secured. Laramie, Wyo., quadrangle, U. S. G. S., shows wind-eroded hollows		Bulletin 15, Geology and Geography of the Wheaton Quadrangle. The U. S. G. S. folios for special regions, as Springfield, Danville, and Chicago. Soils of U. S.—pp. 171-175 in Modern Geography, S. B. T. Salisbury's Adv. Physiography, pp. 46-53.
2. Transportation and deposition. a. Fine material-dust. Supplied by Weathering, River flood-plains, etc. Deposits—		Observe transportation of sand and dust when wind is blowing.	Salisbury's El., 18-19. For teachers: Salisbury's Advanced Physiography. Hobbs. Earth's Features and their Meaning. Chap. XV, XVI, XVII.

Recitation	Laboratory	Field	References
Loose - importance. b. Coarser materials—sand. Supply sand as above — also from shores. Deposits—dunes. 3. Regions favorable for wind work.	Sand-dune pictures are helpful. Also topographical sheets showing sand-dunes. Coose Bay, Ore. Lakin, Kansas City, etc. Ocean City, Md.—Del. Moses Lake, Wash. Camp Clark, Neb., folio is excellent for all phases of wind work.	Observe soil deposited by wind on snow near a plowed field.	
III. Weathering. (3 wks) approximately. 1. Chemical work of atmosphere. a. Oxygen. b. Carbon dioxide. c. Water. 2. Mechanical work. a. Changes in temperature. b. Frost. c. Plants and animals. 3. Movements of mantle rocks. Creep, landslides, etc. 4. Part played by	Study oxygen. Make oxygen with ozone and water. Bring out meaning of oxidation and combustion. Show the effect of oxygen on mantle rock and bed rock.. Make carbon dioxide. Show the effect of carbon dioxide on water and finely powdered limestone.	The work on weathering and stream action might be combined. Have a definite outline for weathering. Consider such points as: Kind of bed rock (if it is exposed); character of rock fragments; action of frost and plants on rock; oxidation; difference in rate of weathering shown by different kinds of rock; effect of cracks, etc.	Salisbury. Ele. 25-27, pp. 222-223. A. B. C. M. 221-222. Dryer, 74-75. For teachers: Salisbury's Advanced Physiography, pp. 71-79. Hobs, Earth Features, Chap. XI.

Recitation	Laboratory	Field	References
weathering in production of soil.			
IV. Ground Water. (1 wk approximately) 1. Existence. 2. Source. 3. Descent. 4. Movement. 5. Springs. 6. Wells. a. Shallow. b. Artesian or flowing. 7. Work. a. Chemical. 1 Caves. 2 Sinks. b. Mechanical. 8. Water Supply.	Find if possible from where your water supply comes—lakes, wells, springs, or rivers. If your water supply is from wells, try to get a section of the rock underlying the region. Find where water enters the rock. Make a study of shallow wells in mantle rock and in limestone. Show why water from shallow wells is unsafe for drinking purposes. What precautions should be taken to insure good water.	The water supply of your own region.	Salisbury Ele., Ch. III. Davis, 224-250. S. B. T. El., 451—Water Supply. For teachers: Salisbury's Advanced Physiography, pp. 80-113. Water Supply Papers. U. S. G. S. No. 225. Underground waters for Farm Use. No. 230, The Quality of the Surface Waters of Illinois. No. 315, Purification of Public Water Supplies.
V. Running Water (3 wks approximately) 1. Transportation of material. 2. Corrasion. a. River valleys. How valleys get streams. Lengthening, deepening and	Class work on streams can be made more effective if topographic sheets are used. For a preliminary study of a contour map, the Mt. Shasta map U. S. G. S. and model are suggested. A map of drainage basins of the United States will show the relation of the various river basins.	Find if possible in your vicinity a small stream cutting in soft material. Have definite questions as to: shape of valley, width, height of banks, position of channel, stream's course (crooked or straight), soil of valley walls, soil of valley floor, cause of curves in streams, places where	Dryer, p. 39. Hopkins, p. 38. Salisbury's Ele., pp. 49-73. Davis, 230-262. Dryer, 105-111. Salisbury, Ele., 84-90; 94-95. S. B. T., 268-303; 234-244.

Recitation

widening of valleys.

b. Stages in history of valleys and streams.

c. Influence of stage of erosion on human activities.

3. Deposits.
   a. Cause.
   b. Kinds.
      Flood-plains.
      Deltas.
      Alluvial fans.

In connection with each of the topics above, try to bring out the human relations; for instance, in discussing corrasion and its associated features such as waterfalls and rapids, emphasize the significance in connection with waterpower, etc. In like manner in discussing flood-plains, emphasize type of soil, liability to flooding, etc.

Laboratory

For the study of a particular river, the Mississippi river is excellent. The maps can be secured from the Mississippi River Commission. The following maps are good: Alluvial valleys of the Lower and Upper Mississippi; and numbers 9, 18, 17 and 194. Bring out such points as the extent of alluvial valley, bluff cities, cut-offs and their effect on commerce, effect of river in increasing or diminishing size of plantation soil products, need of improvement in channel: and relation of Lower Mississippi to the Deep Water way and Panama Canal.

For stages in history of valley and streams use such topographic sheets as Fargo, N. D.; Charleston, W. Va., and Butler, Mo. Try to bring out the topography and its effect upon the industries and transportation of the area.

For deposits, Tooele,

Field

stream is cutting or depositing, abandoned channels (if any), number of tributary streams, size and shape of tributary valleys and transporting action of water. Show effect of this stream upon the region. On this field trip, try to bring out some of the ideas of the contour map. Try to show the meaning of contour line and contour interval.

References

For teachers:

Salisbury's Adv. Physiography, pp. 114-205; pp. 178-179; 203-205.

Hobbs, Earth Features, Chap. XII, XIII.

The stream of your own region in Ill. Geol. Survey Bulletins.

Uses and Problems of Inland Waters, S. B. T. Ele. 412-464.

Recitation	Laboratory	Field	References
VI. Glaciers. (3 weeks) 1. Formation. a. Conditions. b. Motion.	Utah; Cucamonga, Cal., and Lexington, Nebraska, are helpful. Lantern slides and pictures are valuable aids in this work.	The snowball illustrates the changing of snow to ice by pressure and partial melting.	S. B. T., El., 380-411; Hopkins, 138-169.
2. Types. a. Valley. Description and examples. b. Continental. Description and examples. 3. Distribution. a. Present. b. Past. 4. Work. a. Erosion. Stripping off mantle rock. Breaking off pieces of bedrock. Striation of bedrock. Striation of loose stones. b. Deposition. Drift. Terminal moraine. Lateral moraine. Medial moraine.	Lantern slides and other pictures may be used to advantage to show the work of glaciers, e. g., erosion, draft, topography, lakes, drainage. Study collections of boulders, glacial gravel, of boulders, glacial gravel, soil, etc. Topographic maps of glaciated regions may be used to advantage. Following are a few that are typical: Whitewater, Wis. — Moraine, outwash, etc. Weedsport, N. Y.—Drumlins. Boston Bay, Mass. — Drumlins, etc. Islip, L. I.—Terminal moraine and outwash. Watkins, N. Y.—Hanging Valleys, etc. Mt. Whitney, Cal.—Mt. glaciation. Danville, Ill. (Folio)—Tell plain and terminal moraine. Tallula - Springfield, Ill. (Folio) — Dessected tell plain.	Take field trips to study as many kinds of glacial work as possible. Study a brickyard as an example of the effect of glacial deposit upon human welfare. Also a gravel pit or a sand pit, or a tile factory. If both a non-glaciated and glaciated region is within reach, compare the topography, soil, drainage, etc., of the two regions and note any differences in the occupations and prosperity of the people. Note the uses of boulders.	Tarr, 310-311. Dryer, 119-123. A. B. C. M., 346-349.

Recitation	Laboratory	Field	References
Ground moraine. Effect on topography and scenery. Effect on drainage. Lakes. Rivers. Effect on soils.	Schools located where glacial deposits are not found may obtain them by exchange with other schools.		S. B. T. Mod., 265-7. For teachers: Hobbs, Existing Glaciers; Salisbury, Physiography, Adv. Course. Wright, The Ice Age in North America.
5. Glaciation in Ill. a. The glacial period. b. Areas covered. c. Soil types. d. Moraines. e. Effect on Commerce. Water routes. Railroads. Wagon roads. f. Effect on manufactures. Clay products. Cement-gravel. Sand. g. Effect on drainage. Rivers. Lakes. Scenic.	Study the soil map of Ill., with reference to glaciation. (Bul. 123, Agricultural Experiment Station, Urbana, Ill.) Compare soils from glaciated and non-glaciated areas. Make a soil and regional map of Illinois, showing soil types, and agricultural, dairying, and manufacturing regions all in relation to glaciation. Show also regions of special scenic value. Make collections of pictures from advertisements of summer resorts, and from other sources, showing the effects of glaciation.	Study your locality with regard to mantle rock, soil, topography. If the streams in your locality have been influenced by glaciation, make a field study of that influence. Study the railroads and wagon roads in your locality as influenced by glaciation. Visit industrial plants which use products of glaciation.	The bulletins of the Illinois Geological Survey (see list at end) give full discussion of the glacial features of the different areas treated. At least one of the bulletins may be selected which will serve as a type for any part of the state. The Danville, Tallula-Springfield and other folios give much information on the glaciation of their respective districts.

Recitation	Laboratory	Field	References
Recreation.			
VII. Volcanoes. 1 week) 1. Distribution. Past and present. 2. Phenomena, as shown by the study of a typical volcano. 3. Topographic forms. Cones on land and in the sea. . Lava flows—plains and plateaus. Lakes. 4. Soils. 5. Destructiveness. 6. Islands. 7. Minor volcanic phenomena.	Use stereographs, lantern slides, or other pictures, to show volcanoes and volcanic effects. Examine specimens of lava if they are available. Study topographic maps of volcanic regions, e. g., Modoc Lava Beds, Cal., Lassen Peak, Cal., Mt. Shasta, Cal. Using pictures demonstrate the fertility of lava soils by showing products.		All physiographies and geologies. S. B. T. Ele., 299-310. S. B. T. Mod., 191-199. Tarr, 112-113 Salisbury, Physiography, 338-390.
VIII. Movements of the Earth's Crust (3 wks) 1. Earthquakes. Causes. Phenomena, as shown by the study of a typical earthquake. Distribution. Destructiveness.	Use pictures showing the results of earthquakes. Make or buy models of blocks to show faulting.		All Physiographies. S. B. T. Ele., 291-298. S. B. T. Mod., 185-191. Salisbury, Physiography, 392-434.

Recitation	Laboratory	Field	References
2. Faulting and folding. Effects on topography. Cliffs. Plateaus. Rift valleys. Mountains. Effects on drainage	Study topographic maps, e. g., Mt. Whitney, Cal. (Faulting) Tooele, Utah, (Block Mountains) Pine Grove, Penn., (Folding). Study the geological map of Illinois, with descriptive text to locate fault lines. Use Ill. Geol. Report.	If the school is within reach of one of the few fault lines in Illinois study it in the field.	A. B. C. M., 376-85. Hopkins, 323-5.
3. Gradual elevation of the land. Changes in shore line. Coastal plains. Stone formed. Coal formed. Oil and gas. Warping. Lakes formed. Streams flow more swiftly than before.	Using Ill. State. Geol. Reports map a. the building stone of the state. b. the coal fields of the state. c. the oil and gas fields of the state. Study the location of coastal cities in relation to harbor e. g., New York, Baltimore, Savannah, etc.		S. B. T. El., 291-4. A. B. C. M., 354-5. Hopkins, 274-8.
4. Gradual depression of the land. Changes in shore line. Indented coast. Harbors. Submerged land. Stone formed from deposits.		Visit industrial plants which depend upon deposits formed in the sea or along the shore, e. g., stone quarries, lime kilns, coal mines, etc.	S. B. T., El., 525-33. Dryer, 167-71. Tarr, 208-10; 223-5.

Recitation	Laboratory	Field	References
Coal formed. Oil and gas.			
IX. Relief Features. 1. Plains. a. Kinds. Coastal. Lake. River. Glacial. b. Economic importance.	Class work on plains can be made more effective by a study of the various kinds of plains. For instance, the Port Orford-Coos Bay (Ore.) sheets show a narrow coastal plain; and the sheets along the Atlantic coastal plain show a broad coastal plain. Models, pictures and profiles to scale are helpful. Try to show the relation between this flat land and the industries of the people. The Atlantic coastal plain affords a good place for the study of coast swamps, for instance, in the Norfolk, Va.-N. C. region. The economic importance of swamp lands can be worked out in the topographic sheet of the San Francisco bay region. The Fargo, N. D., sheet and the Chicago folio are helpful in the study of lake plains. The Mississippi River sheets are excellent for a flood plain study.	Study the flood plain of your home stream. Find out its effect upon the industries of the region. In the Chicago region, study the lake plain.	A. B. C. M., 352-366. Tarr, pp. 72-79. Hopkins Ele., 313-315. Dryer, 41-49. Davis, Ch. VI. Chicago Folio. Herbertson, Man and His Work. Ch. VI. For Teachers: Salisbury's Adv. Physiography, Chap. 9, especially p. 472. U. S. G. S., "An Interpretation of Topographic Maps." Professional Papers No. 60.

Recitation	Laboratory	Field	References
2. Plateaus. a. Origin. b. Topography. c. Condition of life in plateaus. 3. Mountains. a. Types and origin. Block. Simple Folds. Complex Folds. Volcanic. b. Topography. c. Influence on. Climate. Man. d. Economic aspects. Mining. Agriculture. Water power. Irrigation. Timber reserves.	The work on plateaus can be made more effective if a special region is studied. For instance, Charleston, W. Va., is an excellent illustration of a dissected plateau. In such a study, try to show the effect of the soil, of valleys, and of abundant rain upon crops and people. Bring out the difficulties of communication. Try to show the relation between topography and such social phenomena as the Hatfield-McCoy feud. The work on mountains can be made more effective by a study of the different types. For example, a study of Disaster, Nevada, sheet may serve to bring out the block type. Pictures, model and topographic sheets of the Harrisburg, Pa., region can be used to advantage in the study of folded and eroded mountains. Try to bring out the effect of such a region on industry and the	In the southern end of Illinois, some work might be done on the Ozark plateau.	Mills' International Geography, pp. 718-721; 748-750. A. B. C. M., 370-372. Tarr, 84-85. Hopkins, 325-327. Davis, 146-150. S. B. T. Mod., 319-320. Maps." Professional Papers No. 60. For Teachers. Mill's International Geography, 732-734. In Bulletin of American Geographical Society for Aug., 1910—"The Kentucky Mountains." A. B. C. M., 377-380; 390-395. S. B. T. Mod., 308-317. Davis, Ch. VII. For teachers: Mill's International Geography, pp. 715-718. The Northern Pppalachians, p. 169 in the "Physiography of the United States." P. P. No. 60, U. S. G. S., An Interpretation of Topographic Maps. "A selected list of topo-

Recitation	Laboratory	Field	References
THE OCEAN (2 weeks) 1. Extent. 2. The bed. Form. Deposits (relate to coastal plains). Character. Distribution.	effect of water gaps on transportation. Pictures, model and topographic sheets of the Mt. Shasta, California, region can be used to advantage in the study of a volcanic mountain.		graphic maps, illustrating physiographic types" from U. S. G. S. Semple, Influences of Geographic Environment, Chap, on Mts.
3. The water. Depth. Composition. Temperature. Movements. Waves. Currents. Tides.	Demonstrate the possibility of colder temperature below and warmer above (as in the equatorial region) by a tank with cold water at the bottom and warm at the top.		S. B. T. Mod., Chap. XII. Tarr, Vhap X. Tarr, 179-98. S. B. T. El., Chap. XIX.
Life in the Ocean.	Study museum specimens of marine flora and fauna, including fossils from Illinois.		A. B. C. M., 429-33.
4. Effect upon land. Shore forms. Erosion. Deposition. Climate.	Study shore forms from topographic maps, e. g., Oceanside, Cal.; San Mateo, Cal.; Mt. Tamalpais, Cal.; Plymouth, Mass.; Stonington, Conn.	Visit fossil-bearing rock if possible. If not, specimens may be obtained by purchase or exchange. Study these in relation to the former submergence of the Illinois area.	Allen, Industrial studies, U. S. G. S., 287-319. Dryer, Chap. XII. Hopkins, Chap V.
5. Importance to man. Food. Transportation and commerce. Trade routes. Harbors. Effect upon climate.	Using commercial and industrial maps, study commerce in relation to oceans and harbors, e. g., New York, Galveston, San Francisco.		For Teachers, Salisbury, Physiography, Advanced Course.

Sample Outlines for Field Trips.

A Study of Mantle Rock.

See Plate 4-A, Bul. 11, Ill. Geol. Survey.

Number:—
Date:

Mantle Rock, Soil, Bed Rock. I. Visit the gravel pit south of Woodland School and examine with care and in detail the mantle rock there exposed by a recent excavation.

II. Is the face of the cut composed of the same materials from top to bottom? What peculiarity do you notice in the way in which those materials are arranged? Beginning at the top examine and describe in regular order the materials found in each layer of the exposed mantle rock, naming the materials found and giving color, size of particles, shape of particles and other descriptive terms, if necessary make a drawing to show this.

III. What is loam? Do you find any here? Of what is it composed? How do you account for the dark color of the upper layers of the mantle rock? What is soil proper? Examine the upper layers for living roots of plants; for decayed roots. How far do they penetrate the mantle rock? Is there much or little humus in the soil at this point? What kind of natural vegetation grows in the soil here? What does this show concerning the fertility of the soil? About how deep in feet is the cut in the mantle rock at this point? Has it been excavated down to bed rock?

IV. From here pass in a south-easterly direction to the nearest quarry and study the mantle rock and bed rock exposed there. Of what material is the bed rock composed? Notice the layers and the position in which they lie.

V. What is the thickness of the mantle rock at this place? Compare its thickness here and in the gravel pit. Are the materials of which the mantle rock is composed the same as in the pit? Are they arranged in the same way?

VI. Describe those materials from above as was done at the gravel pit. Do you find any clay? Describe it. (Notice the shape of the fragments of stone in it.) Make a drawing to show the arrangement of materials at this place.

VII. Follow along the face of the old quarry and examine the mantle rock in several places. How does the soil here compare with that at the gravel pit? What is the quantity of humus? Look for peat. How did it come here? Do you find any fragments of shells in the peat? What is marl? See if you can find any places where the peat is so full of broken shells as to make a fairly good marl. Describe it. How do you account for its presence here?

Time for this field trip, eighty minutes.

A Study of Stream Action at Reed's Woods.

See Plates 7 and 8-A, Bul. 11. Ill. Geol. Survey.

Begin work at the fence along the north side of Bush Park where it crosses the stream.

Standing on the bridge, take a general view of the valley immediately above the fence. Has this stream a valley floor? If so, about what is its width? How high are the banks on either side? Notice that the channel of the stream is somewhat lower than the valley floor. What is the width of this channel? Its depth? Are they the same in all parts of the stream's course? In what part of the valley does the stream's channel lie? Is the stream straight? Does it always lie in the same part of the valley floor? Describe its course in the valley floor. Notice the angle of slope of the banks of the valley and sketch a cross section of the valley at this point, showing the relative width and depth of the valley, the slope of the banks, and the position of the stream in the valley floor.

Descend to the valley floor and make a study of the soil of the valley floor at several places where it is exposed along the channel of the stream, noting the materials of which it is composed, its color and whether there is evidence of stratification or not. Then examine the soil composing the valley walls. Discuss with your instructor the differences you note in these soils. Name the kinds of trees found growing in the soil of valley floor. Name the kinds of trees growing on the upland on either side of the valley. At a few selected points, study the movement of the stream in its channel. Compare the steepness of the banks on the inside and outside of the curves. On which side of the curve is the current the swifter? Why are the slopes different on these two sides? Tell what is taking place on each side of the stream at the curve and note the materials at the water's edge on the inside of the curve. Note the great number of curves in the course of the stream and tell what effect on the position of the stream on its valley floor the process just studied will have in course of time. Do you find any place where the stream is at present cutting the walls of the valley? If so, what effect does this have on the size of the valley of the stream? As you go up the stream, count the number of places where this action is going on. At one of these points note a landslide. Are there more than one of these? How are they caused? What effect have they had on the stream's channel? On the velocity of the stream? What will become of this material in time? Do you find any evidence that the stream is deepening its channel? Why do you think they were abandoned? Examine an abandoned channel about half way up through the woodland and study it with your instructor. Is this valley floor a flood plain? Give reasons for your answer. Do you find any outcroppings of the bed rock in this valley? Compare the material in which this gorge has been cut with that at Sugar Run.

Enter the first large tributary valley to the right and follow it up to its source. Has it a valley floor? Sketch a cross section of this valley and compare it with one of the main valley.

Compare the steepness of the slope of the bed of this valley with that of the main valley. What relation between this and the shape of the valley? Is this valley older or younger than the main valley? How many branches has this tributary? Are they as straight or straighter than the main tributary? Why? Follow these up to their sources. Will these branches grow any longer? In what part of their valleys have the streams cut deepest? In what part of their valleys have the streams been cutting longest? At which end did they first begin? Examine them at their source and find evidence that they are extending their channels in that direction? Plate 8-A, Bul. 11. What effect will this have in time on the land beyond them? As you follow up the main tributary compare the steepness of the slope of the bed in its lower and its upper portions. Is this bed concave or convex? Note the slopes of the valley walls. Have they rounded or sharp crests? Are these slopes concave or convex? At some point where the current is moderately rapid, throw into the stream a handful of soil containing pebbles, sand, clay and the like, and study the action of the water in asserting and transporting the material.

NOTE: See Bul. 11, pages 60-64 for descriptive material.

Time for this trip, one-half day.

BOOKS FOR PUPILS.

Author.	Title.	Publisher
Allen.	Industrial Studies—U. S.	Ginn & Co.
Ridgley.	General Circulation of the Atmosphere.	McKnight, Normal, Ill.
Ridgley.	Rainfall of the Earth.	McKnight, Normal, Ill.
Ridgley.	Vegetation Zones of the Earth.	McKnight, Normal, Ill.
Brigham.	Commercial Geography.	Ginn & Co.
Herbertson.	Man and His Work.	Obtained from Oxford Univ. Press., N. Y.
Herbertson.	Descriptive Geography from Oriental Sources.	Obtained from Oxford Univ. Press, N. Y.
McMurray.	Larger Types of American Geography.	MacMillan Co.
Carpenter.	Geographical Reader—N. Amer.	American Book Co.

BOOKS FOR TEACHERS.

Author.	Title.	Publisher
Mill.	International Geography.	Appletons.
Salisbury.	Physiography, Advanced.	Holt & Co.
Powell et al.	Physiography of United States.	American Book Co.
Gregory Keller & Bishop.	Physical and Commercial Geography.	Ginn & Co.
Shaler.	Aspects of the Earth.	Scribner's.
Shaler.	Man and the Earth.	Duffield.
Johnson.	Mathematical Geography.	A. B. Co.
Jackson.	Astronomical Geography.	Heath.
Waldo.	Elementary Meteorology.	A. B. Co.
Ward.	Climate.	John Murray.
Wilham.	Meteorology.	Macmillan.
Davis.	Elementary Meteorology.	Ginn & Co.
Cox and Armington.	Chicago Weather.	To be published soon.
Moore.	Descriptive Meteorology.	Appleton's.

Author	Title.	Publisher
Robinson.	Commercial Geography.	Rand McNally & Co.
Herbertson.	Man and His Work.	May be obtained from Oxford Univ. Press or from Macmillan Co.
Herbertson.	Geography from Original Sources.—N. Amer.	
Blackwelder and Barrows.	Elements of Geology.	Amer. Book Co.
Geike.	Earth Sculpture.	
Semple.	Influences of Geographic Environment.	
Salisbury et al.	Geol. Survey of N. J., Vol. V. (Glaciers).	
Hobbs.	Existing Glaciers.	Macmillan Co.
Geikie.	The Great Ice Age.	London.
Wright.	Ice Age of N. Amer.	Bibliotheca Sacra.
	Geol. Survey of Wisconsin.	
	Bul. V. (Glaciers.)	
King.	The Soil.	
McMurray.	Special Method in Geography.	Macmillan Co.
	Cloud Chart.	U. S. Hydrigraphic Office, Washington, D. C.
Russell.	North America.	Appleton's.
Russell.	Lakes of North America.	Ginn & Co.
Russell.	Rivers of North America.	Putnam.
Russell.	Glaciers of North America.	Ginn & Co.
Russell.	Volcanoes of North America.	Macmillan
Hobbes.	Earth Features and Their Meaning.	Macmillan Co.
	National Geographic Magazine.	Washington, D. C.
	Journal of Geography.	Madison, Wis.
	Monthly Evening Sky Map.	150 Nassau St., New York City.
	Text Books of Astronomy.	

LABORATORY BOOKS FOR PUPILS.

Author	Title.	Publisher.
Smith, Stahl and Sykes.	Laboratory Exercises in Physiography.	Heath & Co.
Everly Blount and Walton.	Laboratory Lessons in Physical Geography.	American Book Co.
Trafton.	Laboratory and Field Exercises in Physical Geography.	Ginn & Co.
Emerson.	Manual of Physical Geography.	Macmillan.
Tarr and Von Englen.	Laboratory Manual for Physical and Commercial Geography.	

PUBLICATIONS OF THE ILLINOIS GEOLOGICAL SURVEY.

Bulletin 7. Physical Geography of the Evanston-Waukegan Region.
Bulletin 11. The Physical Features of the Des Plaines Valley.
Bulletin 12. Physiography of the St. Louis Area.
Bulletin 13. The Mississippi Valley between Savanna and Davenport.
Bulletin 15. Geography of the Middle Illinois Valley.
Bulletin 19. Geology and Geography of the Wheaton Quadrangle.

Besides bulletins listed above, there are several others dealing with water resources, clays, cement, coal, oil, etc. A list of all the publications of the Survey may be obtained on application to the State Geological survey, Urbana, Ill.

MANUAL ARTS SECTION.

The meeting was called to order at 2:00 P. M. and Mr. F. M. Porter of the department of General Engineering Drawing of the University of Illinois was appointed secretary.

After a few words of welcome to all of the visitors, the chairman introduced the first speaker of the afternoon, Mr. A. P. Laughlin, Supervisor of Manual Training of Peoria, who delivered a discussion on Supplementary Work in Manual Training. The theme of Mr. Laughlin's discussion was the development of initiative in the student. The discussion follows:

Supplementary Work in Manual Training.

"If I read Manual Training History and the signs of the times correctly, the Manual Training movement has just completed one cycle in its development. The emphasis at first was upon its vocational value—then came the child study movement with its doctrines of interest and its emphasis upon a sense of need as the necessary factor in all effectual study—then, the arts and crafts movement with its insistence upon honesty and beauty and now, again it is the vocational value of the work that is attracting most attention.

"We ought and can, I believe, square ourselves with the advocates of each of these phases of the work, but it is certainly true that just now the advocates of vocational training will not be put off, that whatever else it may possess, Manual Training must also have some decided vocational value, or we are sure to lose the confidence of our students and the people generally. Already our work has been called in question and there are not lacking some people of prominence who have said, I believe, that we have failed in this respect and that some other sort of school must do the work that had been assigned to us. At any rate, certain it is that we must be able to say to our boys and girls and their parents—'We are giving you something here that will help you to do your work better and easier when you go out into the world of industry than you would be able to do it if you did not stay here with us,' and we want to be sure that that claim is really a true one.

"I submit this proposition, however, that neither you nor I can, under ordinary school conditions, turn out finished craftsmen—journeymen as the craft call them—skilled mechanics, and if we could, we could prepare for only a very few trades and most likely succeed only in upsetting the labor market in our own immediate neighborhood, either lowering wages in those trades or compelling our boys to migrate in order to obtain a job. No, we can not and I for one do not wish to turn out mechanics able at once to take their places in their particular crafts. But what is it then that we will do that will be of any great vocational value? What is it that we will do to make good our claim in this respect and to justify the expense of our department? Such a question can hardly be answered offhand, we may be years in finding an adequate solution, nevertheless, it is up to us here and now to attempt at least a provisional answer. I therefore invite your attention to the following:

"Let us so train our boys and girls as to start those habits of thought and action and to encourage those traits of character that are those of the successful men and women in the industries.

"Before outlining any methods for securing these results, let us take a look at the men and women of industry, let us especially inquire what those qualities of character are and those habits of thought and action that have raised one man above another in the industrial army. To this end, let us, if you will, make a table setting off on one side the defects that hold men down and on the other the corresponding characteristics that lead to strength and efficiency.

"In making out this table we should be careful not to draw upon our imaginations. We should search for facts—undisputable facts—facts that can be obtained only by searching the lives and history of the workers all about us. I have made such a study a part of my work for several years and I submit the following as a partial list of defects that cripple and hold men down:

1. Low ideals.
2. Too hurried to do good work, yet wasteful of time.
3. Not orderly.
4. Unable to read drawings.
5. Reads few books, or reads to scoff.
6. Not interested in his work or his employer's success.
7. Disloyal.
8. Does not plan his work.
   'Makes his heels do what his head neglects.'
9. Does not keep notes. Forgets things and so, has to be continually working over materials that he should know.
10. Unwilling to try new tools or processes.
11. When work is intrusted to him to design as well as execute, he turns out crude, unlovely, inadequate, hurried things, devoid of personality, or rather possessed of the wrong sort.

I shall not weary you with a longer list, although I hope you will make one for youselves.

"After such a survey we are, it seems to me, ready to outline our course of study, our methods, our policy. We can not train our boys in the details of all the multitudinous trades that they are bound to enter. What we can and ought to do is to give them the training that our study of biography has shown us should lead to power in the industrial world, i. e., we should give them ideals, give them moral training, give them a love for books, a respect for books, and the ability to use them in their work; a respect for good craftsmanship, a love for the beauty in every day things, a respect for their own ideas, courage to follow them, a desire and a courage to be artists in whatever trade or calling they may enter.

"To this end it would seem that whatever we do in our shops we ought to do it well—for all honest work is doubtless art and moral training.

On the one hand, slovenly work, disorderly benches, careless drawings, poor accounts impress me as being positively immoral; while taking careful care of such little things as pencils, knives and benches seems to me to be just as positively spiritual—it is a genuine struggle for the right, the good, the beautiful, for truth and justice—the best and surest moral training possible to give in our schools, and surely, the very foundations of art lie in order and the mastery of one's tools.

"To this end, also, it would seem that a study of history and biography might help. It is essential that our boys get ideals somewhere—the right sort—for, ideals are the fires under the boilers, the elemental forces that drive us. They make boy bandits, bomb throwers, anarchists, revolutionists, patriots, martyrs, saints, captains of industry or just good mechanics, according to the sort and the native power and intellect of those who possess them. Let us then, in our Manual Training classes at least, study the great men of industry as well as the great men of war and of state. We have often been disappointed to hear in our schools, our churches and from our lecture platforms the great men of history mentioned and to find wholly ignored such great benefactors as Sir Henry Bessimer, who gave us our steel rails, bridges and buildings; Cyrus H. McCormick, who did so much for agriculture; or John Harrison, who did so much to make navigation safe, of whom Samuel Smiles says, 'No complete narrative was ever written.' But, had he been a destructive hero and fought battles by land or sea, we should have had biographies of him without end.' Indeed, at times, we too, become almost touchy upon this point. At any rate, some of the time at least, let us, boys and teacher together, study the lives of the great men of industry. And not alone the great men, let us also do a bit of historical research among the men of industry who are all about us each write the history of some local man, successful or otherwise, asking him why and wherein he has been successful, why and wherein he falls short of a larger success that might have come to him. In all this study let us search for the qualities of character and the habits of thought and action that lead to industrial efficiency.

"Let us search for definite facts, such for example as the following: The man who reads little or reads to scoff is, other things being equal, less successful in his work than the one who reads and reads to learn; or,

"The man who is unable to express himself clearly and forcefully either orally or in writing is at a disadvantage when he encounters a man who can so express himself, or the man who puts no personality into his work, or the wrong sort, who does hurried, unlovely, inadequate work cannot compete with the man who, through diligence and careful thought, does things rapidly and well, unhurried but adequate.

"These are mere facts, but seeing them clearly, seeing the effect upon the men will, I believe, lead to a deeper purpose to read more, to learn to express onesself clearly and forcefully, lead to the formation of ideals that will give to their work some measure of that quality we speak of as art, ideals that will drive the boy on and on as nothing external can ever do.

Before passing let me name at least two men who can and do write industrial biographies with real insight and power, Dr. Samuel Smiles and Geo. Iles.

"Again: Some of the time at least, let us permit the boy to do the whole job. Let us not require of him simply a joint, a table or an engine part, planning out all the work ourselves and so making a low grade mechanic of him. Let us require him often to plan the whole thing, to be responsible for the design, the beauty, the fitness of the thing. Let us not for the sake of organization, results, personal convenience or any such thing, rob him of the joy and character building qualities of doing the whole job, remembering that the more thought he puts into his work the better, for no skill alone, but a combination of skill and intellect, theory and practice make the most efficient men.

"Let me make a few practical suggestions that are drawn from my own experience.

"Since, as the child study specialists have shown us, a sense of need is always an essential condition before we put forward any very effective effort, whenever possible have some attractive model or models that illustrate the processes you wish to teach. Show the models to the students together with the parts in various stages of completion, pointing out where the various new tools or processes are used, making the point that we need to know these processes and how to use these tools if we hope to succeed. Then tell them about some of the tools but refuse to tell them the whole story until they have read about these matters in various books to which you refer them. Require them to write down the various statements they are able to find, then discuss these statements with them and give them your method of procedure and the one, or ones, that they may use; for some times part of the class may well follow one method and part another comparing results later, thus developing the experimental habit and method. Attack the problems presented, process by process, tool by tool, mastering each before proceeding to the next.

"When this group of processes is thoroughly understood let the students design other models that involve only this group of processes. The limitations thus set are a spur to the imagination and it is design of this sort, that acknowledges limitations and frankly meets them, that is of most value.

This, then, I have made a general rule.

1. Arouse an interest in a group of tools and processes that make a certain sort of project possible.
2. Master the processes one by one, combining reading, observation, practice, recording and comparing of results in securing this mastery.
3. Offer an opportunity for design in this field that is now understood, thus developing initiative, permitting self expression and securing further skill and power in that field.

"To develop the recording habit: If it is a class in shop work, give the boy a card for each job. Have him note such facts as,

His name.
Teacher's name.
Name of school
Room Number.
Date of starting.
Date of finishing.
Course of study.
Periods of work.

Have him fill out the bill of materials required, the rate of charge for each and the cost. If he spoils a piece have him note the fact. When the job is completed have him note wherein he failed to do the best work and the cause.

"If it is a class in drawing, have the boys make a list of standard defects and note the ways in which they occur, e. g.,

1. Blotted lines caused,
    (a) by drawing too close to straight edge.
    (b) by having the pen too full.
    (c) by jerky movements at the ends of the lines, etc.

"Going back to our study of successful men, I have questioned some of Peoria's best stair builders, the Commissioner of Public Works, and some of the most successful workmen, and I find that all of them have traveled much and visited much—as one man expressed it, 'When I was a sub and a young journeyman I often spent weeks at a time watching jobs that I wanted some day to be able to handle.'

"It would seem, then, that shop visits should be made a part of our work. Shop visits that mean something, that have some point, visits made for the study of special questions, e. g.,

(1) The storage of supplies.
(2) The management of materials through the factory.
(3) Use of jigs, division of labor.
(4) Costs, all the costs overhead as well as the cost of labor and materials.
(5) Tool rooms.
(6) Health conditions.

A well written report should be considered essential after every such visit, otherwise there is danger that the boys will come to consider these as simply days off.

"If it were possible, on such visits, it would be most illuminating to get,

(7) The history of all the men above the grade of mechanic.
(8) The history of all the mechanics.
(9) The history of all those below that grade.

Certainly the history of some of the men in each of these grades can be secured and should be most carefully and thoroughly studied.

"I wish to tell you of one of my experiments that took no time so far as the school schedule was concerned and that resulted in arousing an immense amount of the right sort of interest and activity on the part of the boys.

"A mid-year class had just entered the high school. They came to me for drawing. After asking them to provide 4 H. pencils for themselves, I inquired how many knew what 4 H. and what compressed lead meant. Their answers indicated several ingenious minds but very little knowledge. We agreed, however, that 4 H. probably indicated a certain degree of hardness and that the word compressed indicated that the lead was not a natural but a manufactured product. We then proposed to add 5 per cent to any boy's monthly grade who would find out how pencils were manufactured and what compressed and 4 H. really meant. The libraries were, fortunately, well supplied with material to answer the boys' questions and about half the class wrote papers that secured for them the 5 per cent. increase to their grade for the month.

"The boys discovered, among other things, that the graphite of which the compressed leads are made is often found under coal. Since we live in a coal mining district, I offered to add another 5 per cent to any boy's grade who would find and bring us some graphite or who would bring us some graphite that was obtained elsewhere, provided he would also tell us where and something about how it got to Peoria. Several boys secured this second 5 per cent and one of them for graphite that was found in a mine just south of town.

"We then proposed to add a third 5 per cent to any boy's grade who would manufacture a compressed lead pencil from materials collected by himself or members of the class. Several boys undertook the problem, but, because of their failure to properly refine their clay, only one of them succeed, and he only after making some nine unsuccessful attempts. The pencil which I hold in my hand and which I hope you will all inspect was his tenth attempt and secured the 5 per cent. to his monthly grade.

"Lastly, we made a few 5 per cent additions to the monthly grades of boys who took the several papers and the written account of Samuel Ross, the maker of this pencil, and wrote one well planned story of the whole undertaking.

"Let me note that this experiment took almost none of the time devoted to drawing. The boys made just as many plates as before, while for those who took part, the research and experimental work, together with the written reports, combined to give in very large measure that combination of theory and practice that is the habit of work among successful men. If it lacked anything, it was the element of careful training.

"I am not proposing, however, that you all make lead pencils, gun powder, matches, glass, bricks, drain tile, paper, brass furnaces, pottery kilns, or any other such things in your classes; although any of these things might serve to stimulate just such activity on the part of the boys. I am simply proposing a way in which you can get some of these extra, or supplementary, things done without sacrificing any of your limited class time, without reducing the number of joints, tables or machine parts that your classes will be able to make. If you can not spare the time for shop visits, let the boys make them alone and offer additional credits to those who make proper reports on such visits.

"In conclusion, as we have already said—our Manual Training schools are not trade schools and we should not attempt to make them such—the boy can best learn the details of his trade in the craft itself. He can, however, lay with us a broad foundation for his future work. He can learn the value of books as well as their limitations. He should not leave us a scoffer, nor yet bound by an unreasoning respect for the authority of the book. He will learn the value of records and in this respect he should easily fall in with the requests of those in charge of the work. His shop visits and the talks of his teacher should give him a respect for the knowledge and skill of the mechanics in his craft. We trust that he will be open minded and ready to learn. At any rate, he should surely make a better mechanic than he would if he had not spent the year with us. No doubt the apprenticeship systems of this country are mostly no systems at all—no doubt there should be continuation schools both for the sake of citizenship and for the sake of a better craftsmanship in most of the trades. We hope to see such schools come, but we feel that our Manual Training teachers can do a very real service to our youth from a purely vocational point of view, whether they offer a one or a four years course, provided they will not hurry on to complete the model, either to please the boy or for the sake of some exhibit, but will keep up their drawings, their note books, their shop visits, their study of successful men. In short, all those things that are often called supplementary, but which ought to be an organic part of our work. No doubt it requires skill and ingenuity to devise ways and means for carrying on, in just balance, all of these varied activities. No doubt our enthusiasm may some times ensnare us, carrying us beyond the boy and his interests. Still, I feel that we should persist and struggle to show the boys the need for, and the value of, such work, secure in our own knowledge, that such a program means that we are giving him a habit of work that spells efficiency, moral training; that means success and ideals that will drive him. This indeed seems to be no new doctrine.

"We seem to arrive at the conclusion that the best Manual Training, that which is well organized, that which arouses the greatest amount of intellectual activity, that which sets up and promotes ideals, that which is so well done as to develop both art and moral training, is thorough going vocational training as well. I have no fear that Manual Training will be thrown out of our schools because it is unfit—I only hope to see it live up to all its posibilities and it is up to you and me—the detail workers—to see that it does possess all of these high qualities."

After the presentation of the discussion, there followed a short general discussion on the possibilities of Manual Training in the direction outlined by Mr. Laughlin, and on the necessity for some action on the closely allied subject, Architectural Drafting, in the High School.

A motion was presented by Mr. A. C. Newell, Director of Manual Training at the Illinois State Normal University, that a committee be appointed to outline a course in Architectural Drawing for the High Schools. The motion was seconded and the appointment of the committee referred to the Program Committee of the combined sections.

Mr. A. C. Newell then presented a report on the meeting of the National Society for the Promotion of Industrial Education and the Organization Meeting of the National Vocational Guidance Association.

During the remainder of the time, the various members of the section presented suggestions on ways and means of increasing the attendance and interest in the work of the conference. A circular letter to all of the Manual Training and Drawing teachers of the state, giving the program of speakers and outline of work to be dealt with, was suggested; likewise a dinner for this section alone at some time during the conference to permit the members to become more closely acquainted.

Cards were passed around with the request that all visitors make note of topics that might well be listed for discussion at the following meeting.

With a short talk by the chairman on the necessity for hearty cooperation from the members attending, for suggestions during the year on matters for which committees have been appointed, and for attendance at successive meetings by those present, the meeting was adjourned at 4:00 P. M.

Mathematics Section

High School Conference, University of Illinois, November 21, 1913.

At the morning session, Professor G. A. Miller, University of Illinois, presided. W. W. Denton, University of Illinois, was appointed Secretary by the Executive Committee.

Moved and carried, that the chairman appoint a nominating committee to nominate a member to serve on the Executive Committee for three years, in the place of Dr. E. B. Lytle, whose term had expired. A nominating comittee, consisting of Professor E. J. Townsend, Mr. J. A. Foberg, and Miss Jessie D. Brakensiek, was appointed and instructed to report at the afternoon session.

The following papers were presented and discussed.

The Use of the Courtis Tests. Professor L. D. Coffman, University of Illinois.

Statistical Methods in Educational Studies. Assistant Professor A. C. Lunn, University of Chicago.

Abstracts of these papers and notes regarding the discussion are given below.

At the afternoon session, Dr. E. B. Lytle, University of Illinois, presided.

The Nominating Committee reported the nomination of Dr. E. B. Lytle as a member of the Executive Committee to serve for three years. The report of the Nominating Committee was adopted. The other members of the Executive Committee are Mr. E. H. Taylor, Charleston, Chairman, to continue for one year, and Mr. C. A. Pettersen, Chicago, to continue for two years.

Mr. H. C. Zeis, University of Illinois, presented a paper entitled *Bibliography on Methods of Grading,* and opened a round table discussion on methods of grading. An abstract of this paper, some notes regarding the discussion, and a full account of the action taken by the section are given below.

The following is an abstract of Professor Coffman's paper:

The Uses of the Courtis Tests.

I. The Nature of the Tests.
   1. Tentative measures of
      a. The degree to which the fundamental processes with whole numbers have been mastered in the grades.
      b. Certain limited phases of the reasoning power of children in arithmetical work.
      c. The various maturity and grade levels of children, with reference to the abilities measured.
   2. Number and kinds of tests:
      a. Addition.
      b. Subtraction.
      c. Multiplication.
      d. Division.
      e. Rate of motor activity in copying figures.
      f. Speed in determining processes involved in solving simple one-step problems in reasoning.

g. The solution of abstract problems involving all four fundamental operations with integers.

h. Speed and accuracy in solving two-step problems in reasoning.

3. Distinctive features of the tests:

a. Uniform tests composed of equal units. Each unit of each test is equal to each of the other units just as one inch is equal to another inch.

b. Tests uniformly given under identical conditions to all pupils in successive grades from 3rd grade on.

c. Tests of sufficient length to keep all pupils busy at top speed during the whole of the time allowed, thus giving a fairly accurate indication of the places where weakness exists.

d. Uniform system of scoring and tabulating the tests.

II. General uses of the tests.

1. Direct attention to the establishment of standards for measuring attainment.

2. Strengthen confidence in the possibility of applying scientific method to the study of educational problems in the field of learning.

III. Specific Educational values of the standards.

1. To the teacher.

a. Gives the teacher definite standards.

She knows exactly what she is expected to accomplish.

Standard Scores.

Test No.	1	2	3 & 4	5	6		7		8	
					ats	rts.	ats.	rts	ats.	rts.
Grade 3	26	19	16	58	2.7	2.1	5.0	2.7	2.0	1.1
Grade 4	34	25	23	72	3.7	3.0	7.0	3.3	2.6	1.7
Grade 5	42	31	30	86	4.8	4.0	9.0	4.9	3.1	2.2
Grade 6	50	38	37	99	5.8	5.0	11.0	6.6	3.7	2.8
Grade 7	58	44	44	110	6.8	6.0	13.0	8.3	4.2	3.4
Grade 8	63	49	49	117	7.8	7.0	14.4	10.0	4.8	4.0
Grade 9	65	50	50	120	8.6	7.8	15.0	11.0	5.0	4.3

(These scores were obtained by using the averages for the third grade and the speed rate that 70 percent fall below and 30 percent rise above for the other grades.)

b. Can determine when she receives a class whether it is up to standard.

c. Gives her a knowledge of the corrective work needed.

Example; substraction test.

"Two girls in the same class obtain scores in, say, the subtraction test which are just half the class average. In the test of their rates of copying figures, one equals the average of the class, but the second again makes a score half the class average. It is evident that the first girl failed in the subtraction test because she did not know the combinations. The second, however, even if she knew the combinations perfectly, could not have equalled the average score of the class because she was handicapped by her ability to make her fingers move at the average rate."

d. Enables teacher to experiment and determine the effectiveness of the methods and devices she uses.

e. Enables her to definitely determine the amount of time required to bring a given number of pupils to the required standard.

- f. Supplies her with a standard for measuring her own efficiency. She can know whether she is an excellent, a good, or a poor teacher.

2. To the Supervisor.
   - a. Can compare the records of pupils with the standards set.
   - b. Can determine whether teacher is getting normal results with normal pupils,—a measure of the efficiency of the teacher.
   - c. Knows where he needs to give and where he needs to withhold help.
   - d. Knows the exact thing the pupils are deficient in.
   - e. Puts supervison upon an impersonal basis.
   - f. Knows whether weak or indifferent teachers are profiting by advice and assistance.
3. To the Superintendent.
   - a. Can locate strong, mediocre and weak teachers.
   - b. Can locate strong, mediocre and weak principals.
   - c. Furnishes him with a basis for the distribution of his time and effort.
   - d. Knows in what topics teachers are weak.
   - e. Measures relative values of different text books, different methods, different amounts of time given to a topic.
   - f. Enables him to compare work of city with that of other cities.
   - g. Supplies him with a basis for judging the effectiveness of his own work.
   - h. Affords a rational diagnosis of course of study.
   - i. Gives superintendent a prospectus of the task.
   - j. May use it to stimulate public opinion to get support and co-operation.

The following is an abstract of Professor Lunn's paper.

Statistical Methods in Educational Inquiries.

By Arthur C. Lunn.

"The attempt to give scientific treatment to the problems of education suggests a variety of questions, some of which involve difficulties due to the dominant influence of the teacher's individuality upon his methods. But one of the problems for which it seems a relatively impersonal treatment should be possible, is that of estimating the results of actual teaching (and thus indirectly affording a test of method) in such a way as to secure something of impartial precision. Of this large question we consider here one aspect. Can we, or how can we, make scientific records of the attainments and progress of pupils under instruction, and by sifting and comparing these records draw general conclusions? Thus the question relates to the scientific basis of marks and averages, and of the inferences based upon them.

"The wide-spread use of marking systems of some sort, and the confusion of conclusions drawn from the records, suggests the need of raising the question, which is one that concerns all teachers but is suitable for discussion in this mathmetics section for two reasons. For one thing, our methods of marking are mathematical at least in appearance, and we should understand their meaning and value if anyone does. Moreover, though formally similar records are used in many subjects, we are fortunate in being entrusted with a subject which is relatively simple and definite in its ideas and in the mental processes concerned in their mastery, so that if anyone can make scientific records of results we should.

"It will be enough to consider marks by numbers or percentages. Other systems, such as letters, are apparenly less definite, though so far as they are used in a similar way they are open to the same comment as numbers, and sometimes receive a pretense of explanation in terms of percentages.

"If it be objected that even the numerical systems do not pretend to be scientific let it be remembered that number is one of the most highly developed and definite of scientific concepts, even if elementary. However little meaning we may really attach to numerical marks ourselves, we must bear in mind that the full meaning of numbers may be read into them by others, and their significance grossly exaggerated and abused, as occurs frequently in assignment of prizes and promotions.

"1. The first principal use or meaning of a single number is that which takes it as the value or measure of a simple metric property, and here we must ask to what extent the notion of measurement is applicable to the mental properties or characteristics which are to be developed or maintained by education.

"Measurement implies two things. The first is that there be assignable a definite unit of measure, which is a particular instance of the same property as that to be measured; the second is that this property be such that to its various manifestations we can apply the notion of addition, or the superposition of two instances to form a single equivalent instance. To allow any useful meaning in the numerical values, as interpreted by the same person in different cases, or at different times, or for comparison by different persons, the unit of measure must be objective, or impersonal and permanently identifiable, and the meaning of addition, in the particular form to be used, must admit of being agreed upon by all concrned. These conditions are satisfied, at least with high precision, by simple geometric or mechanical properties such as length, volume, angles weight. With respect to mental or psychological properties it may well be asked whether we can even speak of any such as being simple. But admitting for illustration that we may so consider, for example, accuracy of reasoning, vividness of geometric imagination, skill in algebraic manipulation, it can hardly be claimed that we find satisfied in these cases either of the two main conditions that justify the term 'measurement.' The time may come when these things are measured, but this is a problem to be prophesied for solution by a profound experimental psychology of the future, not something already attained. The term has no proper application to these things at the present time.

"2. The second principal use of number is as a symbol of order for a simple ordinal property. If a property is metric the number-value resulting from measurement may also serve as a symbol of order. But there is many a property, such that the various instances of it admit of arrangement in some kind of order, but which is either not metric at all or is such that measurement is impracticable. The applicability of some kind of ordinal symbols in connection with mental properties seems to be suggested by the common use of comparative adjectives in speaking of various abilities of students, and one can perhaps conceive of an ordinal scale of numbers for a mental property, just as we have scales of color, or hardness, or temperature. But to justify judgments expressed by such means, it is necessary that the scale be objective and permanent, or at least that different scales admit of definite comparison; and that the place in the scale of any particular instance of the property be determinable by some trustworthy method of observation. There seems to be little evidence that such a scale can be said to exist, except in the vaguest sense, in the background of existing systems of marking.

"Perhaps the most striking thing to be noticed here is that there can be an infinity of different ordinal scales, which arrange a given set of individuals in the same order, but by means of different numerical labels. To say that one teacher marks low, another high, may mean simply that they use different ordinal marks. To see how baseless is any conclusion from this fact as to the justice of their markings, it is enough to notice that there is no reason for saying that one scale is correct rather than another. They may be completely equivalent. To illustrate this, notice that the same set of cubical blocks may be arranged in order of size by giving the edge, area, volume, square root of edge, etc. Let the largest be called 100 in each case. Then a certain cube, according to which scheme is used, will 'get' 50, 25, 12.5, or 70.7. These marks are equally correct as ordinal symbols; and the illustration is really too simple, because here we know simple algebraic relations between the scales.

"3. A number may be used to indicate or belong to a complex of simple properties, metric or ordinal. Space forbids comment on the additional difficulties, such as determination of suitable relative weights, which occur here even when the simple properties are amenable to numerical representation.

"4. A number may represent an average of several instances of a metric property, the term being probably never applicable to ordinal properties as such. To average a set of unlike individuals means primarily to substitute for them an equal number of like individuals such that the new set shall be equivalent to the original for some chosen purpose. The method of averaging depends upon what this purpose is, and unless it is assigned there is no meaning to the term 'correct method of averaging.' The continual use of the arithmetic mean is a thoughtless generalization from the few familiar cases where it is really applicable. As illustration note that to find two wires of like diameter equivalent to two of unlike diameter, is a varying problem, according to whether the equivalence is to relate to total distance across them laid side by side, to total weight, to total electric resistance in parallel or in series, etc. On students' records the averages would be meaningless, even if the individual records were really metric, unless the kind of equivalence implied were also to be defined; and the most ardent advocate of a marking system would have trouble in finding an answer here.

"Considerations such as these, here only outlined, seem to indicate that at present our percentage records are practically destitute of intelligible meaning in the individual entries, offer no clear basis for comparisons of any value between various records, and admit no justified method of averaging. Conclusions drawn from them are liable to become either examples of self-deception, or cloaks for purely arbitrary administrative acts."

The discussion of the above papers was led by Professor H. L. Rietz, University of Illinois.

Discussion of Papers by L. D. Coffman and A. C. Lunn.

By H. L. Rietz.

"The two papers we have just heard present very different views concerning the effectiveness of certain quantitative tests of the ability of school children.

"In attempting a discussion of these papers, let me say in the beginning that I have a feeling that the often cited 'golden mean' gives a position that is more tenable and of more value to the teacher than either of the two positions that have been so ably presented.

"Professor Coffman has dwelt upon the applications to which teachers, principals, and supervisors may make of the results of the Courtis tests to determine both the progress of pupils and the efficiency of teachers. It is assumed in the paper by Mr. Coffman that the quantitative results of the Courtis tests give a sufficiently accurate index to ability to make the results serve directly as standards for teachers, principals, and supervisors.

"Such important applications of the results being proposed, it is clear that we should certainly consider somewhat critically the question as to whether the character of the tests justify us in making such applications in the present state of the important problem that Mr. Courtis is attempting to solve.

"I have been much interested in the study of these tests, and find much in them to commend, but I am at present inclined to be critical on the ground that there is danger that too broad application will be made of the results without emphasizing their limitations. It is assumed in making applications of these tests that an adequate 'yard stick' is available for measuring a certain desired kind of ability, and that other conditions that are fundamental in scientific measurements are satisfied. For a criticism dealing with these conditions, I need not repeat any part of the clear presentation of Professor Lunn.

"Let us turn then to view critically a few points in the Courtis tests. In the paper* by Mr. Courtis, we find the statement that 'it is to be particularly noted that the wide range of distribution is caused not so much by great differences between schools as by the great variation in the abilities of the individual children. The amount of variation in the grade averages of different schools does not equal the variation in the score of the members of any one class.' In support of this statement, he gives a frequency distribution of one class of 47 individuals to compare with the distribution of the averages of 51 classes. To be sure, these averages are not so variable as the individuals, but no attention is called to the fundamental distinction between the variability of an average in random sampling and that of individuals. In a general way, the variability of individuals to the averages derived from n such individuals is in the ratio of $\sqrt{n}$ to 1. Indeed, the striking thing to me about the exhibit of the frequency distribution of the 51 averages is their great variability rather than their constancy.

"Very naturally the proposed applications of certain standards to individuals brings to our attention the question of the reliability of single tests. These tests have been criticised on this ground, and Mr. Courtis has answered the criticism in a way that is partially satisfactory. In his answer to a proposal to repeat tests on a single individual, we read* that 'in dealing with mental facts, however, we do not even assume that we can reproduce the conditions, as the mind is so evidently affected by the measurement.'

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*The Elementary School Teacher, Vol. XIII, No. 3, Nov. 1911, p. 132.

"While this shocks a little our conception of the fundamental principles of applied science, let us grant the statement. If so, should we expect the teacher to adapt instruction to the ability just tested if the test has so affected the mind that it cannot be repeated approximately at least. I sumbit that it is not likely that a mind built up by several years of training and repetition would be greatly changed by a single test, and that the variability in the reactions of a given individual is better ascribed to chance unless some progressive tendency is actually shown to exist.

"We are indebted to Professor Lunn for a very interesting and valuable exposition of the fundamental conditions for scientific measurement. He has shown that many numbers that represent so-called measurements in dealing with educational problems are really not measurements at all, but simply ordinal numbers that arise from attempts to give order to certain individuals of a group with respect to the same character.

"With ordinal numbers merely, the ordinary theory of averages does not apply. This limitation should be more fully recognized than it has been thus far in our systems of marking students and taking an average according to the conventional formula for arithmetic mean.

"On the gneral question of the application of statistical methods to educational problem, and under the assumption that we are dealing with a character that can be measured, I wish to say a few words about the use of the correlation coefficient. To illustrate my point, consider the correlation coefficient (The Elementary School Teacher, Vol. XIII., No. 10, p. 497) based upon the relative ranks of 21 individuals in the first and last tests. This correlation coefficient is $r = +0.43$. The mere statement of such correlation, without the double entry table from which it is calculated, may be very misleading. There are so many pitfalls in the Statistical Theory of Correlation that good statistical practise demands that the table be given in order to interpret $r = +0.43$. Further, if the correlation is one concerned with ranks rather than with measurements, the theory is not at all that of the Galton-Pearson theory for variants.

"To sum up my views on the papers, let me say that I approve of and feel an interest in the problem of testing abilities of pupils if the limitations are recognized, but I do not feel that we have a solution general enough thus far to serve in any very general sense as standard for judging teachers and pupils."

Miss Margaret V. Cobb, University of Illinois, called attention to the definiteness in the standard of efficiency obtained by the Courtis tests. Mr. Walter P. Morgan, Illinois State Normal School, Macomb, Ill., expressed the opinion that these tests were the most scientific of any so far devised. Miss Jessie D. Brakensiek, Quincy, Ill., Mr. Dewitt Elwood, Charleston, Ill., and Mr. C. E. Comstock, Bradley Poly. Institute, Peoria, Ill., also discussed the paper. Several members expressed the opinion that a rigorous mathematical treatment of the data presented in the Courtis tests was not necessary for

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*The Elementary School Teacher, Vol. XIII, No. 7, p 329.

a scientific interpretation, and that practical results might be obtained without being so exacting.

Mrs. Jane Pollock Anderson, New Trier Township High School, remarked, that, during the discussion of the use of the Courtis tests to determine the standing of pupil and teacher, she was watching for information regarding the table used in determining the graphs and the unit of measurement. She heard nothing about these things, and was more than ever convinced that that table and unit do not exist. For years, she has been using the ordinal method of comparison or standing of pupils. She has indicated the standing of the pupils by numbers (from 1 to the number of pupils in the class) *on each differnt type of work, giving double emphasis to the reasoning side.* The next step has been to see what the standing of the highest ought to be (but of course that is in the teacher's estimation), and what the lowest ought to be, and range the others between. This gives the relative standing of pupils in a class. The marks cannot be compared with the marks of other months, 75 per cent. meaning one thing one month and another thing another month, according to the quality of the work done. The satisfaction for teacher and pupil in knowing that it is only comparative ranking cannot be estimated. The enthusiasm of the pupils in investigating pupils of other teachers and other schools to find out what they know and how they are marked is noticeable, also the fact that these pupils do not judge by answers but by the methods of attack and reasoning. She expressed her *objection to any test of ability that depends on answers regardless of methods back of them.*

Following is an abstract of Mr. Zeis's paper.

Bibliography of Methods of Grading.

By H. C. Zeis.

"The literature which deals with the various phases of our subject falls into two main divisions, viz. (1) the articles that treat different methods of marking examination papers, and (2) the articles that deal with the problem of assigning grades to the student at the completion of the course. In the appended bibliography the first five articles deal more particularly with the first point of view, while the remaining articles discuss the latter problem. An attempt has also been made to make a rough classification in a descending order of value of the articles in the list.

"Starch and Elliott of the University of Wisconsin have made two studies, one with two examination papers in High School English and one with a paper on Geometry, the papers in each case being graded by about 140 high school teachers of the respective subjects. Extreme variations of marking are revealed, being even more striking in the cases of the Gometry paper than for the English papers.

"Professor Jacoby of Columbia University gives results of an experiment in grading Astronomy papers by six profesors of Astronomy.

Professor Starch gives results of an experiment in grading papers in Freshman English at the University of Wisconsin by ten instructors in the same course. Astonishing variations are revealed.

Professor Cattell of Columbia and President Foster of Reed College discuss a scientific method of distributing final grades, based on the probability curve.

Professor Dearborn's study discloses the widest variation in grades among high schools of Wisconsin.

"Professor Max Meyer of the University of Missouri traces the evolution of the present ranking system used at the University of Missouri. By means of a faculty supervision of grading, a considerable degree of uniformity has been secured. The method consists of merely ranking the students by the instructor of the course and then separating them into three divisions containing 25 per cent, 50 per cent, and 25 per cent respectively, but of the first 25 per cent, the instructor gives the grade E to about 4 per cent; the grade S to about 21 per cent. The middle 50 per cent are all graded M. Of the lowest 25 per cent, about 18 per cent receive an I. and about 8 per cent the grade F (failure).

"President Foster explains the distribution in vogue at Reed College. Grades are distributed according to the probability curve, skewed to make allowance for the selective factor which operates on college students."

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1. Reliability of Grading High School Work in English.
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2. Reliability of Grading Work in Mathematics.
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3. Note on Marking System in Astronomy Course at Columbia University.
   By Professor Harold Jacoby; Science, p 819, Vol. 54.
4. Reliability of Marks.
   By H. Austin Aikens; Science, p 518, Vol. 55.
5. Reliability and Distribution of Grades.
   By Professor Starch; Science, Oct. 13, 1913, p 630.
6. Examinations, Grades, and Credits.
   By Professor McKeen Cattell; Popular Science Monthly, p 367, Vol. 66.
7. Administration of the College Curriculum.
   By W. T. Foster.
   Chapter XIII entitled "The Need of a Scientific Distribution of Grades" (Same article will be found in Pop. Sc. Monthly, p. 388, Vol. 78.)
8. School and University Grades.
   By W. F. Dearborn; University of Wisconsin Bulletin, Vol. 7-10.
9. Grading of Students.
   By Max Meyer; Science, p. 243, Vol. 51.
10. Experiences with the Grading System at the University of Missouri.
    By Max Meyer; Science, p. 661, Vol. 56.

11. Scientific Distribution of Grades at Reed College.
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15. A Study of High School Grades.
By F. W. Johnson; School Review, p. 13, Vol. 19.
16. Marks and the Marking System as an Incentive to Study.
By S. J. Colvin; Education, p. 560, Vol. 32.
17. Relative Standing of Pupils in the High School and University.
By W. F. Dearborn; Wisconsin University Bulletin, Vol. 1-6.

Dr. Lytle led the discussion of this paper. He first summarized the results of the morning discussion.

The mathematician's criticisms of educational statistical studies, he said, might be summed up under the following heads.

1. There is too often a failure to distinguish carefully between *measuring* and *ordering;* measuring requires a precise unit while ordering does not.

2. There is a careless use of *averages;* ordinal numbers are often incorrectly averaged; too great significance is placed upon averages and not enough upon deviation from averages.

3. Correlation theory is full of pitfalls; educational studies too often fail to print sufficient data to enable one to check up their work which makes it impossible for a careful scientist to accept their conclusions.

He explained that

"At the last meeting of this section the executive committee was instructed to appoint a committee to continue the invesigation of grading systems. This committee was appointed early last spring but the chairman was ill most of the summer, another member had typhoid fever, and a third member who was to do the statistical work on their report moved to a place where he no longer had access to calculating machines. Late in the fall the chairman submitted printers' copy for a questionnaire with Algebra and Geometry tests for grading, but thought he would not be able to compile the final report when answers came in. We found difficulties in getting printing done promptly and could find no one at that late date to work up the committee report. So the executive committee thought it best to substitute a Round-table Discussion for that committee report. The executive committee wishes to express its appreciation of the efforts made by this committee to overcome their handicaps and get out their report.

"In the past most publications on the subject of pedagogy have been expressions of personal opinions. Lately under the leadership of Prof. Thorndike of Columbia there has been an attempt made to attack some pedagogical questions in a really scientific manner. Some members of this Section have caught some of that spirit of real scientific pedagogical work and have tried to get us started on some constructive work toward establishing in a scientific manner some facts relative to the teaching of mathematics in our high schools. The committee on ways and means of procedure in such a study started us on the question of proper grading systems.

"In our Round Table Discussion today we wish to consider the following questions:—

1. *What particular benefits would come from more uniform systems of grading?*
2. *What can this Section do to establish more uniform systems of grading?*
3. *How can this Section help to prove in a really scientific manner some fact or facts relative to the teaching of mathematics?*

"We trust there will be a free expression of opinions here today with some definite notions pointing toward specific constructive work for this Section in the future.

"In discussing grading systems we should distinguish between 'Final standing grades' and 'Test paper grades'. Simply as a basis for discussion I venture to suggest the following standards:

Final standing grades.

90-100, for those who possess real mathematical ability and who are expected to be high stand students in any succeeding mathematical courses they may take.

80-89, for those of just average ability and the plodders who do satisfactory work without showing special ability.

70-79, for those who pass but are weak students and may be expected to have some troubles in succeeding courses.

below 70, for those who should repeat the course.

Test paper grades.

On each question take

100 per cent off, when no comprehension of the question or its proper attack are shown.

50 per cent off, when general method of attack is right but certain subsidiary principles are ignored; as, canceling terms for factors, or taking square root of polynomials term by term, etc.

10 per cent off, for each numerical error.

5 per cent off, for poor arrangement of work or slovenly appearance.

5 per cent off, for each careless slip; as, error in copying, etc.

Suggestive questions.

1. If checking is requested and the pupil solves an algebraic equation correctly but does not check, what should be his grade?
2. If, in a test, a pupil is prevented from obtaining a correct solution of an algebraic equation by a single mistake which the teacher is certain was due to carelessness, what should be his grade?
3. If, in proving a proposition in Geometry, the student assumes the truth of what he is to prove and uses it in his argument, what should be his grade?
4. A student, in a test, proves the converse of the proposition assigned, what should be his grade?
5. The construction problem, 'to divide a given line into five equal parts', is asked for in a test. The student assumes that he can draw parallels without actually constructing them. What should be his grade provided the rest of his construction and the proof is correct?

(These questions are taken from the questionnaire submitted by the above mentioned committee.)"

Mr. Comstock called attention to some dangers in the application of percentage systems. A scale of merit is to be distinguished from a final ranking in a course. On the other hand, teachers are likely to attach some significance to the moral element suggested by grades of "good" or "bad" where no moral implication is intended.

Moved by Professor Reitz, and carried, that teachers, who have a number of grades (say 150 or more), so that the probable error is not large, study the frequency distribution of the grades which they have themselves given, and present to the committee of this conference some data and graphs, which may be used on the program for next year.

Professor J. B. Shaw, University of Illinois, suggested that in plotting the graphs note be made of exemption grades when such grades exist.

Mr. Comstock suggested that the graphs be made for marks in one subject only, namely, beginning algebra.

Moved by Pofessor Townsend, and carried, that the teachers who are willing to furnish such graphs leave their names with the Secretary, and that the Executive Committee send out definite instructions as to what is desired, so that there may be a common basis on which the Committee may formulate its judgment in planning the program.

The following teachers signified their willingness to furnish graphs:

Bernice Harrison, Homer, Ill.
Mabel Sykes, Bowen High School, Chicago, Ill.
C. E. Comstock, Bradley Poly. Institute, Peoria, Ill.
Elsie Smith, Benton Township High School, Benton, Ill.

Miss Cobb called attention to the distinction between the determination of standard types of efficiency obtained by the Courtis tests and the determination of the psychological factors behind the solution of the problem. Mrs. Anderson again objected to the use of tests of ability depending upon answers alone regardless of the methods back of them.

Mr. F. D. Bowditch, Urbana High School, suggested the possibility of the members of the section coming to an agreement in the making of final grades for a semester's work and the impossibility of agreement in making grades at intervals during the semester.

Moved by Mr. E. H. Miller, Rantoul, Ill., and carried, that the Executive Committee devise an efficiency test for beginning algebra and present it to the next section. (Carried by vote 10 to 2, many members not voting).

W. W. Denton,
Secretary.

MODERN LANGUAGE SECTION.

This section met in the Lecture Room of the Commerce Building with Miss Augusta Krieger of Highland Park presiding. The morning's program featured two papers both of which were concerned with the direct method;—the first, "Is it profitable?" by Mr. Earle Babcock of the University of Chicago, and the second, "Can every teacher use it?" by Director Griebsch of the National German-American Teachers' Seminary of Milwaukee. Both questions were answered in the affirmative. Because these men are seasoned teachers all who listened to the papers were impressed with the weight of their arguments as well as with the great sincerity of their belief in the direct method.

Professor T. E. Oliver introduced Mr. Babcock. His paper is given in full, as follows:

"The discussion of the above subject can have but little value unless we first determine what we intend to teach in elementary modern language classes and what we mean by the direct method. While teachers may find it difficult to agree as to either of the above points we may be able to lay down certain general principles which will meet with acceptance. Every one will admit that the ideal toward which we tend, i. e. to give our pupils a mastery of the foreign language equal to that which they have of their own is unattainable. We ought, however, to enable them to make themselves understood and to understand the spoken and written language, and especially to read without *any* difficulty the newspaper or the book to which they turn for information or pleasure. That such results are not being obtained is undeniable and many of us believe that they cannot come from any method based upon translation of one language into the other. Moreover, scholars seem to be unanimous in the opinion that whether or not the spoken language is to be used in after life it is impossible to acquire a sound knowledge and delicate appreciation of a foreign speech unless it is correctly pronounced. We must give our pupils the ability to understand *directly,* without the aid or rather the hinddrance of translation, groups of words either oral or written. Then only will they feel a consciousness of power, and the lifeless mass of information which they possess will be transformed into a dynamic possession. And thus they will receive a taste for the effective use of the foreign language. We may appropriately call a method of teaching which accomplishes such a result the direct method, but such a term must be clearly defined before it can have a definite meaning. It is undoubtedly due to a misapprehension of what is meant by the term that the direct or natural method has been and is attacked and ridiculed.

"The direct method may be defined as consisting essentially in the teaching of a foreign language without the constant aid of the mother tongue. Its foundation principle is that the word has no real existence except in its connection with other words. The pupils must always learn the meaning of the word from the sentence and not the meaning of the sentence from the words of which it is composed. The first words, or rather groups of words must be acquired in an intuitive manner with objects and actions which are an immediate part of the learner's experience. But it is misleading to say that it is a reproduction of the way in which a child acquires his mother tongue, a 'maternal method.' It is not an imitation of the external form which we desire, but a principle which we can carry over into our teaching. Statements that it makes no difference what the pupils talk about if they will only talk, or that the mother tongue is not used in foreign countries and therefore should be prescribed in the class-room, are contrary to all the teachings of pedagogy and common sense. Certainly artificial or haphazard conversation besides being extremely difficult to maintain, produces results distinctly inferior to those obtained from the translation method. There can be no effective teaching without organization, continuity, constant repetition. The absolute prohibition of English from the class-room may give fair results with very young pupils and with simple words. But with older pupils, and as soon as the vocabulary grows larger and is more abstract the difficulties increase. An enormous amount of time is required to make clear the simplest facts, which are frequently not understood at all or are misunderstood. Therefore it is extremely rare that the exclusion of English is rigorously carried out. The pupil must not be allowed to get into the habit of being satisfied with vagueness and uncertainty as he will then have a wrong attitude toward his language study in particular and toward other subjects in general. The dangers from so extreme a method are thus more far-reaching than is generally supposed. A teacher who so far forgets the most elementary psychological principles forgets that all branches of instruction are closely related and interdependent. He isolates himself from his colleagues in other fields and hinders them in their work. Moreover subjects must be necessarily simple and trivial or they will not be understood, and therefore the student will not treat them seriously. Such instruction is incompatible with the spirit which should prevail in the class-room, and by this very fact it seriously compromises its own success.

"Now what principle can we discover by observing the manner in which the child acquires its mother tongue which we can profitably use in our own classes? The child learns to speak, as he learns to pronounce, by mere imitation. He learns to understand by a slow and painful process of continual divination. The acquisition of new terms becomes progressively easier and more rapid as his vocabulary increases and his associations grow in number. At first he learns words and phrases from the circumstances under which they are pronounced; later he uses both the circumstances and the words already acquired; finally new expressions are understood from the context alone. By means of continual repetition and rectification he obtains that exact intuition concerning the various shades of meaning of a word which no definition can replace. These sounds have an intimate connection with reality and experience which make them the nucleus and foundation of all his later linguistic development. But it is by his own attempts to reproduce the sounds he hears that a child learns them and remembers them. Psychologists tell us that the mental effort involved in pronouncing a word fixes it much more firmly in the mind than do the processes involved in simply seeing and hearing it. This is a fact of fundamental importance for the teaching of languages even where the primary aim be but the acquisition of a power to read. We must also remember that the power of articulation can come only from the exercise of the organs of speech, that theory and reflection can never take its place. The child learns to speak by speaking. Articulations are not, however, an end in themselves; they are a means of expressing thought.

"We can easily see now that the process by which a child acquires his mother tongue is far from being perfect from a pedagogical point of view. It is exceedingly wasteful, long drawn out, and unsystematic. Endless repetitions of words which have long been known, failure to bring in others when they would be most helpful, the absence of any logical order in the presentation of linguistic facts so that they may be classified; these and other characteristics of the manner in which the child learns to speak have been often imitated by advocates of the direct method to its great disadvantage. We should not treat our pupils as if they were no older and no more developed mentally than they were when they learned English, or as if they still had the imitative faculty which they possessed at the earlier period, or as if they still had the time to devote to our study which was once at their disposition. But we must remember above all that now they possess one language and that they tend constantly to substitute English sounds for those of the new language, and that they have already learned to think so that their ideas are associated with their mother tongue which will continually thrust itself between them and their expression in the foreign language. Our problem then is quite a different one from that which confronts nature in the case of the infant. But the principle remains the same and we must try to make our pupils pass rapidly through the various phases through which the mind of the child passes in learning the mother tongue.

"The order to be followed is both natural and logical. We proceed from the easier to the more difficult, from speaking to reading and then to writing. For, contrary to an often expressed opinion, it is easier to speak a foreign language than to read one because of the slight vocabulary required for conversion in the class-room. A foreign laborer will learn to speak English long before he can read it. Opponents of the direct method have stated that it aims to teach pupils to speak like laborers, hotel porters, cab drivers, etc. The conversation in the class room must be adapted to the class-room and therefore make use of a very limited and simple vocabulary. But while it is the basis and beginning of our teaching it is by no means the aim and the end of it. After it is once acquired it will be merely the means of giving life and reality to later study through the artificial atmosphere which it produces. The pupil will get into the habit of understanding directly the meaning of groups of words expressed in the foreign language and to so express his thoughts. The importance of this fact cannot be overemphasized for it is the corner stone of the direct method.

"From the beginning then we must converse with our pupils. But the prerequisite for conversation is a good pronunciation, and both reason and experience show that mere imitation is insufficient in acquiring a good pronunciation. The necessary shift to a new basis of articulation is the all important thing to understand and effect in learning to pronounce a new language, and this can only be accomplished by an explanation of the formation of its sounds based upon phonetic descriptions and comparisons or rather contrasts with the sounds of English. It is impossible here to consider in detail to what extent the use of phonetics is advisable in the class-room, but it must be kept in mind that it is a means to an end and should be employed only in so far as it advances that end. The teacher will therefore be guided by the maturity of his pupils. There is no doubt that much time is saved, even where the pupils are very young, by showing the combination of the sounds in speech by phonetic symbols in the beginning, the standard orthography to be learned later. In any case the technique of pronunciation can only be acquired and maintained by means of frequent mechanical exercises which drill the pupils in the articulation of the foreign sounds. Finally, pronunciation should always be taught in stress-groups and never by isolated words. The learner should be shown that in languages we are dealing with sounds, not letters.

"Grammar is of almost equal importance with pronunciation. By showing the relation between words it alone gives clearness to the sentence. But for our purpose to know grammar is not to be able to recite a large number of rules. It is to give correctly and without hesitation to a word the form which it should have in the sentence and it becomes a simple matter provided it be acquired by continual induction from the exercises rather than studied for itself. The grammatical exercise offers in itself interesting and important language practice. We must take advantage of every opportunity to give the pupil practice in oral repetition. As soon as he succeeds in answering simple questions concerning gender, number, verb forms, etc., he is really speaking, and furthermore he gains confidence in himself and his ability to express himself in the foreign language. Grammatical terms are much the same in all languages and the pupil will soon understand and answer directly in the foreign tongue. Since the direct method is based on the comprehension of the sentence it is essentially a grammatical method, but it is a means not an end, a means of speaking and writing correctly. It plays much the same role here as it does in the study of the mother tongue. It is the definite expression of linguistic laws which long practice has made instinctive.

"It is now clear that after the pupil understands the formation of the foreign sounds, pronunciation, vocabulary and grammar are taught together and in the same way become a part of the memory and the mental habits of the pupil. The most important device for bringing this about is that of repetition. The correction of mistakes furnishes here an excellent opportunity. When the pupil makes a mistake the teacher should ask another to correct it and then have the correction repeated by others singly, and finally by the class together. One of the great dangers is that too few members of the class will take part in the recitation, that there will be too much individual instruction. During the class hour each pupil should speak several times.

"A printed text lends itself admirably to these various operations and after the first exercises in conversation it should be the center of the class exercises. It should be thoroughly assimilated by means of questions carried on in the foreign tongue, conversations which seem spontaneous but in which the pupil is carefully guided by the teacher. It may be advisable to give a general idea in English of the passage under consideration. It should then be read slowly and distinctly by the teacher. Experience alone can show how the meaning of each sentence can be best brought out. By every means in his power the teacher will throw as bright a light as possible upon all portions of the text. When there is clearly a misunderstanding about an abstract word or idea he must never hesitate to give or ask for the word in the mother tongue, but the two languages must not be mixed. However short the period may be when English is used the pupil must be made to feel that during that time he has been taken out of the foreign atmosphere of the class-room and that he returns to it when that period has passed.

"The translations from and into the foreign language which were the center of the old method should not be abandoned but simply modified. They must be adapted to the new aim. Instead of an instrument for acquiring the language translation and composition should be used merely as a means of control, for making sure that points presumably understood really are comprehended. Instead of being the first thing in the study of a text they are the natural result of the explanation and commentary in the foreign language. The translation should be helpful to the pupil's knowledge of English but this is not the main purpose of the exercise. The main object of any study is the culture and development of the mind. But we remember that our method must be rigorous, conducted in accordance with a definite plan and continual progression. Then only will it develop the powers of observation, the habit of induction, intuitive activity and the organs of speech and hearing. The consideration of a text from every angle forces the pupil to reflect and to notice its every detail. The meanings of words are made precise by definition and association with other words. The power of classification, of analysis and judgment is developed by means of the inductive teaching of grammar. Finally his literary sense and taste are formed by means of the texts themselves and not by preconceived notions concerning the foreign literature and civilization. Our teaching is then first of all practical in that we attempt to give the pupil effective possession of the foreign language by enabling him to acquire knowledge which is at the same time power. But we claim to do far more than that. No one will contest the value of the reading of the best foreign writers for the formation of taste and intelligence. The greatest benefit which the study of a foreign language can give lies in the culture which comes from an acquaintance with a foreign civilization as expressed in its literature, its social life, its art. And then by comparison and contrast we cultivate in the pupil a better comprehension and appreciation of his own country and people."

It was Dr. Goebel's pleasant task to introduce the next speaker, Director Charles Griebsch, who, though not personally known to the majority of those present, at least is known to all as a great leader in educational matters. His paper follows in full:

The Direct Method.—Can every Teacher use it?

"The only result in language study worth while striving for is the acquisition of the language. This includes the faculty to understand the spoken and the printed foreign word; the acquisition of a living idiomatic vocabulary ready for correct use in speaking and writing; the ability to see the beauties and characteristics of the literature in the foreign tongue and the understanding and appreciation of the people whose language we study. The interrelations of these aims are such that the first presupposes the second, the second the third and so on; and none of them could suffer to be dispensed with.

"The direct method claims to be the method by which these aims can be accomplished successfully.

"The direct method, as its name implies, seeks to construe a direct connection between the idea and the foreign word, thus eliminating the medium of the mother tongue. It lays special stress upon the avoidance of mere study of words. Whereas it endeavors to awaken, or to form the idea in the mind of the student as the basis for the new word, or assure itself that the right idea is connected with the word which the student hears or sees in the course of instruction. The point objected to most is that the pupil must be made not only to understand the spoken word but also to speak it himself. There should be no defense of this aim anymore. Every language originated from the desire to express one's thoughts by his speech. This is true in the mother tongue. Why should it be different in the study of a second language? Only the spoken word gives character to the language. The very word-sounds, the formation of the sentences, the inflections must be heard and spoken, if the pupil is to take interest in written or printed texts. Only the spoken word makes a language a living language; the fullfilment of all other aims, especially of the so-called cultural ones is at stake unless we accomplish this one aim, namely: The understanding of the spoken word and the readiness to give expression to our thoughts and ideas in the language we strive to acquire.

"Some important phases in the application of the direct method are as follows: The direct method is the bitterest enemy of translation as it has been conducted heretofore. It demands that the language of instruction be the foreign tongue as far as this is possible. In the early part of the work we might not be able to do away with the mother tongue entirely, especially in such cases where certain distinct conclusions, as for instance in grammar teaching, must be reached. But we must try to substitute the foreign language more and more, the farther the pupil proceeds in the acquisition of a ready vocabulary.

"On account of the importance given to the spoken word phonetic training is emphasized. Two things we can do in making our pupils get the correct pronunciation; firstly, to show them how the sounds are produced, secondly, to give them the phonetic script for further references. The latter point is still disputed by many teachers. My own experience has taught me that the phonetic script is a great time saver in teaching pronunciation. It is a valuable help to the pupil in reproducing the correct sounds where the ear is not ready to distinguish the difference and, therefore, the organs of speech are unable to reproduce the differences.

"Another phase which must be accorded an important place is the speaking or conversation in a broader sense of the word. The direct method has nothing in common with the old conversation methods which in most cases consisted in mere memorizing of a number of phrases and idioms. In our method the spoken word is the basis of the entire teaching, and speaking, therefore, can hardly be separated from the other branches of instruction. It has to precede all other teaching, such as reading, grammar, and composition, and after these phases have been introduced it has to go parallel with them. Only then we can attain the end named before, that the pupils acquire the ability to understand the spoken word and to express their own ideas by the same.

"The teaching of grammar has been and still is, discussed most. The direct method does not do away with the teaching of grammar. One change, however, the grammar method had to suffer. In former days, grammar was the master, now it has been made a servant. Formerly the grammar rule was given, its application—if there was any—was executed deductively, without any consideration of the other branches of language teaching. Grammatical exercises did not have any relation to texts or oral exercises, they consisted of words, nothing but words. The instruction in grammar deviates in two points from the former way of teaching. Instead of giving grammar exercises whose vocabulary is different from that of the other branches of language instruction, the new method takes great care to make use of the vocabulary which the pupils already possess and of which the meaning will come involuntarily to their minds. Grammar is taught inductively in the direct method; i. e., the grammatical rules are developed from the conversation exercises and the reading text by the self-activity of the child. Both have already given the child a certain amount of 'Sprachgefuhl,' the feeling for the language. Grammar instruction strengthens this feeling by verifying its truth through the grammatical rule.

"The entire language teaching centers in the acquisition of the vocabulary and its use. And yet, how different from our former way we now proceed. There are still a number of text books in use, in which each lesson begins with the new vocables. These have to be memorized before we can go on in the lesson. Today, to memorize the vocables is not the preliminary condition for the acquisition of the language, but the result of our teaching. The student is taught to think, to form ideas and conceptions, before the sound expression is given. Especially here his cheerful collaboration is to be looked for. If we arouse his interest in the matter, if we excite his mental power, then, the enlargement of his vocabulary will be a pleasure to him. He himself will note the progress he is making, how his memory gets stronger and stronger, how his ability to express himself grows, so that he gradually learns to master even a difficult task with certain ease.

" 'Memory is love—one holds in his memory what he loves,' is true in every kind of school work, but especially in language teaching. We usually distinguish two parts of the vocabulary, the active and the passive vocabulary. The active vocabulary is kept alive through constant use in our conversation exercises. Here the thought looks for expression by our speech. The passive vocabulary is enlarged through hearing and reading, and the expression heard or read awakens the corresponding idea. To make the amount of the active vocabulary as large as possible must be our constant endeavor. Every branch of language instruction must be put in service to reach this important aim.

"Can every teacher use the direct method? He not only can, but should use it! The direct method offers a vast number of possibilities for exercising the self-activity of the pupils. It gives them the opportunity to speak the language and to express their own thoughts, such as are active in their own mind. The language in script or print strives either to recall into our consciousness ideas which are dormant, or to transfer such as may be new to us. The direct method demands that our pupils read themselves and find those ideas by their own thinking and reflection. Also in grammar teaching we let our pupils find the rules by their own reasoning.

"General pedagogy emphasizes the objective teaching as the fundamental basis for the acquiring of all knowledge. To be sure, the aim in teaching a language is to give the children the words of this language and to instruct them in the correct use of the latter. But the younger our pupils are the more necessary it will be to show them the object itself, to point out to them its attributes, to perform before them or have them perform themselves actions, and to present to their view the relations of the different objects to each other, or of actions to objects—all this in order to create the concrete background of the words in the mind of the pupils and to enable them to connect word and idea or concept. Here again the direct method is in accord with a general principle.

"All faculties of the pupil must be put into activity in teaching. The direct method follows this demand. The child offers the flexibility of his organs of speech, the power to imitate, the power of memory, the power to perceive and apperceive, the power to associate ideas and the power to reason. Each one of them will serve a special purpose in the acquisition of the language, and at the same time will be strengthened by way of thus being put into activity."

The discussion that followed these papers was opened by Dr. Leslie M. Turner. Following is an abstract of his discussion:

"I. The advantages of a *full* and *intelligent* application of this method—whose essence is to teach through the medium of the language taught—might be roughly summarized as follows:

1. The direct method results in the pupil's being able to understand a foreign language when he hears it spoken.
2. It results in his being able to *read* that language without the aid of a grammar or dictionary, i. e., to *read it directly* without the necessity of pre-establishing the English equivalents. Hence it enables him to read more *rapidly* and *more thoroughly*.
3. It results in his being able to *converse* and *write* in the language studied and hence to '*use*' it.
4. It results in his being able to get more directly into touch with the author's *thought* and *emotion*, to get nearer the author's point of view, nearer the full expression of the author's personality. The pupil commences to *think* and *feel* in the language taught. This is a serious advantage from the standpoint of *culture*.

"To resume. The pupil's ability to *understand* another language when he hears it, to *read* it rapidly and directly, to *use* it practically, and to *appreciate* it more fully, such seem to be the main advantages resulting from a complete application of the direct method. Theoretically, then, this method is a good one. It does not come far short of being, *ipse se,* a perfect one. 'Cest la methode par excellence!' for there are few teachers who would not be satisfied to obtain the results indicated above. Unfortunately the problem is not so easily solved. The question to be decided is *not* what is the *best* or ideal method, but what is the best method *applicable,* what is the best method for use in the High Schools? And here we come face to face with the real problem.

Disadvantages.

"For the convenience of discussion, I have arranged the objections to the direct method under five heads:

1. The teacher problem.
2. The time problem.
3. The pupil's aptitude problem.
4. The question of homogeneity.
5. The pupil's 'future need' problem.

"1. First, then, the *teacher problem.* Is the average High School teacher capable of using the direct method? This question merits the particular attention of the Conference. Personally I must answer it in the negative. My reasons for doing so are partly of a practical and partly of a psychological order. * * * We all agree, I think, that language is something more than a series of symbols or signs, that words do nothing but *represent* the author's *thought* and *sentiment,* and that under the word is the flow of what William James calls the 'Stream of Consciousness'. Now to get more thoroughly into this 'Stream of Consciousness' (and one can never fully do so) the teacher should be able, so it seems, not only to *think* in the language he is professing, but what is perhaps more important still, be able to *feel* in that language. The question, then, is this: How can a teacher hope to think and feel in another language unless he has really *lived* that language? Such an acquisition necessitates a long stay in Spain, in France or in Germany as the case may be. It necessitates a free mixing with the people of another tongue, or, at least if it be impossible to go abroad, a thorough saturation in the appropriate *milieu,* a long process of living and acting, of thinking and feeling along the same lines as the people whose language one wants to teach. Now we know that very few of our teachers have the time or opportunity to follow such a program. The reply to this first objection, then, seems clearly indicated; the average teacher is not able to use the direct method. Unless he goes abroad to live in the appropriate *milieu* or can find this *milieu* at home, he had better not attempt to use the direct method as above defined.

"2. *The time problem.* Let us suppose, however, that we had a body of teachers trained (modern language college * * * etc.) to use the direct method, a second objection immediately arises. Does an intelligent and thorough application of the direct method need more time than we have at our disposal? Is this method satisfactory when used, for instance in a two-year High School course? Can the pupil in such a course get the necessary grammar, syntax and composition, without mentioning his ability to talk about, to read and appreciate directly a piece of ordinary prose in another tongue? Briefly; Can anything be done by an adept of the direct method in two, or in even three years? This question can perhaps only be decided by experiment, by a comparison of the results thus obtained with those obtained by the use of other methods.

"3. *The pupil's aptitude problem.* 'A large proportion of the pupils learning by this method never can get away from their English thought,' says a recent study of the question. (Compte rendu du Congres de langue et lit. fr. 1913, p. 30.) If this be so, we must be ready to adopt the principle of 'weeding out' and hence that of the formation of new classes or re-forming of old ones with the administrative difficulties of time, of teachers and of methods involved in such a procedure.

"4. *The 'homogeneity' problem.* 'Fifty per cent of the High School pupils who commence a foreign language,' says a recent report of the National Education Association, 'leave school at the beginning of the second year. Of the remainder, only half finish the curriculum. * * * The question then is; 'Is one year of direct-method teaching of any use at all? Can it be applied, with better results than an English-language method, to the one-year group as well as to the more-than-one-year group?' Perhaps a concentration on grammar, translation and pronunciation, taught through English, with a view to mental discipline and precision, would be a better solution. This problem, also, seems to merit particular attention. In any event the objection has been raised by the National Education Association and those in favor of the direct method should be ready to furnish a reply.

"5. *The pupil's 'future need' problem.* Does the direct method with its ideal results fit in with the 'future needs' of the majority of the pupils? Is it worth the average pupil's while to acquire, at a greater expense of energy and time, the use of a tool which he will seldom or ever need practically? Had he not better put his extra energy into something else? Is not the direct acquisition of language a matter for specialists only? Or else, if the need argument have no weight and if the culture value claimed by this method be sufficient reason for its adoption, let it be clearly shown that such claims can be realized without any greater expenditure of time and energy than the pupil has at his disposal. This objection, of course, raises the whole problem of *use* versus *culture*. We cannot possibly go into it here. We can only state it as a necessary factor of the discussion.

"In summing up, we may say, I think, that there exist really serious objections to the use of the direct method. We have indicated several of them above. The list is in no way exhaustive. No doubt there are other objections to the direct method which call just as strongly for solution.

"Perhaps after all there is no one method which can be applied in its integrity. Perhaps we only need to modify the direct method, or perhaps again, there is something good in every method and we may profitably use a composite one according to circumstances. These are all questions for whose solution the opinions of the Conference will be of the greatest value."

The discussion was continued by Mr. Felix E. Held of the Univeristy of Illinois. He expressed himself in brief as follows:

"No method of teaching can be successfully forced on any teacher. Familiarity with the subject, patience and sympathy with the pupil, together with a reasonable amount of instinct to teach, will evolve a method. Experience alone will test it out and improve it. A teacher may profit by the experience of others and will follow some generally accepted plan. Three such generally accepted plans lie open to the High School teacher of today: the old-fashioned drill and grammar method, a radical and extreme direct or natural method, and a happy combination of the two. The first-named method fails in that it teaches a dead and unusable language. Any method that fosters slipshod preparation and results in inaccuracy of forms, sentence order or any of the other essentials of correct writing and speech (especially in these days when English grammar teaching in the grades is far from perfect, and when Latin has been eliminated from the schedules of so many High School students)—is still worse. A sane use of the direct method by a sensible and properly equipped instructor will bring about some fluency in the use of the language, and need cause no loss in the degree of accuracy attained by the so-called grammar method.

"The truth or untruth of this statement can be best proved by the High School teacher, who having the privilege of keeping a class of pupils from the first step through several consecutive years of language study, can test out a given method and show definite and reliable results. The college teacher, at least in our larger institutions rarely has such an opportunity, since he cannot well have the same pupils for successive years."

After Mr. Held's talk opportunity for open discussion was allowed. The question of teaching prose was brought up. In Dr. Griebsch's reply he urged assigning a concrete incident as material for composition work in German, thus making possible the securing of more accurate and careful results.

Dr. Goebel's impromptu talk in connection with the teacher's ability called forth two truisms, i. e., (1) if the teacher of a foreign language can create a love of the language among his pupils the battle is won, and (2) if the teacher can not awaken self-activity on the part of the pupils he better give up his position. Dr. Goebel also said that two more points were attainable through the direct method and upon which he wanted to throw particular emphasis, namely, the music and rythm of the German sentence.

The report of the committee of the modern language section was heard next. The committee consists of Professor Oliver, whose term is for one year, Miss Krieger for two years, and Miss Olson, who was elected unanimously by the conference, for the three year term.

From a list of questions and problems which the committee had gathered by correspondence from the teachers of the state the conference decided that the following should be the basis of work for the year

1. Wastes in the Teaching of Modern Language—their Remedy.
2. Elimination and Retardation with reference to Students of German, French and Spanish.
3. A Working Basis for the Great Number of Language Teachers who do not speak the language fluently. Report on New Material at their Command.

This committee has been instrumental in creating a bureau at the University to which questions may be sent and from which information on all topics pertaining to modern language teaching may be obtained, such as names of firms where postal cards, maps, newspapers, books, magazines, etc., may be bought, knowledge as to exchange of correspondence between pupils of America and Europe, etc.

The afternoon session was given over mainly to a demonstration lesson by Dr. Griebsch with a beginning class in German from the Urbana High School. These pupils were strangers to Dr. Griebsch. They had covered thirteen lessons in Vos' Essentials of German and were ready for the verbs of the strong conjugation. By using one of the Holzel charts as a basis for conversation Dr. Griebsch developed the idea that some verbs undergo a vowel change in showing tense. He drilled them in the use of the present and past tenses of "hangen," "liegen," "essen," "steigen," "fallen," and "ziehen." The hour and a quarter lesson made evident the possibilities in a class of pupils whose status of work he could know intimately and with whom he could work continuously.

After this "Probelektione" the Modern Language Section separated into two groups.

In the German group two papers were given: (1) "German Instruction Through the School, Club, Church, Theatre, Novel, Newspaper, etc.," by Miss Gladys Graham, of La Grange and (2) "Some Principles of the German Lesson", by Miss Blenda Olson of Macomb Normal School. Following is a very brief abstract of Miss Graham's paper:

"Fellow language teachers and friends:

Is there any subject in the High School curriculum harder to teach than a modern language? Not difficult in the sense that Latin is where the problem consists in finding material suitable for the pupil and arousing interest in the subject matter, but, on the contrary, most difficult because of the immense amount of ground there is to cover in so short a period. The time has passed, thank goodness, when German was taught as a dead language (though they must have been easy days for the teacher!) Then the aim was to teach the pupil to read, write, and translate fairly difficult prose. Today we must do this but much more. The pupil must also be taught to converse (at least to some extent) in German, and to have a fair understanding of the people themselves, their country, history and literature. It is for this reason that we as teachers of German must today turn to the German club, newspaper, theatre; not only to arouse interest—that comes first—but actually to stimulate study, in fact, to aid in instructing the pupil. We cannot teach him all the German that we think he should know in the given number of text-book lessons.

"I feel that my duty towards my pupils is to build up a strong circle of interest around them which they cannot break through, so that they are forced—whether they know it or not—to study German every day, all the time, at home, or on the street, as well as at school. The pupil should not forget all his German when he leaves the class room, as some men drop their religion when they leave the church door. Our greatest power as teachers lies in our ability to arouse interest by any means whatever, in the study of German, and to make use of the habits and instincts of the pupils to that end.

"The old idea of a teacher was that he should be a well of information and that the pupil must draw his knowledge out by his own efforts. That is true in a way. By all means, we should be funds of knowledge in comparison with those we teach. But our duty, does not stop there. Far from it, we must work with the pupils doing the things they do, following their mental processes and going through all the 'motions' with them. We must be the elder brother or sister of the child and go along with him, though never forgetting to aid and guide him as we go. Studying a foreign language is like traveling in a strange country where all, at first, is difficult and confusing. But for him who has an elder brother to travel with him, one who has been there before, who can wisely but kindly guide him, telling him that 'aller Anfang ist schwer' but that it is really worth while. The game is worth the candle. Then how wonderful it is! We believe firmly that to 'master a new language is to acquire another soul.' Why not always keep this ideal before the pupils!

"Granted that we are as teachers well prepared to do our duty towards our pupils, that we have the knowledge of our subject with all that it implies. Granted that, we realize only too well how limited the time is (only two or at most three years devoted to German in our High School course, where we should like to have at least twice as long.) That we have enthusiasm, patience and knowledge of the young people's natural processes, needs and interests. Granted that our underlying idea is to make the study of German real and vital by making it interesting to the young people and appealing to their instincts and powers of mind. (A German newspaper is only interesting to a pupil in its appeal to his mental experiences). Granted once more, that we agree in all this, Is it practical? How does it work out?

"I do not want to take your time this afternoon discussing things abstract and theoretical. May I be pardoned therefore, if I take a few minutes longer to tell you in a brief and personal way how I attempt to carry out my convictions with my classes.

"I try always to keep a German atmosphere (Stimmung) in the class room. The walls are hung with German pictures—a portrait of Emperor William, one of Bismarck, photographs of German scenes and places and buildings (collected by myself abroad), several German mottoes and quotations, which my pupils memorize, and illuminated cards. On the desk stand Goethe and Schiller, framed together. On the bulletin-board German post cards, newspaper clippings, illustrations under 'Uber Land und Meer' and, above, the American and the German flags side by side. I stand outside the class-room door and greet the pupils as they enter in German. We talk English in class only where it seems quite necessary. My class-room work is always informal. A pupil is allowed to say practically anything he wants to, provided he will do so in German. If a persistent fly bothers him he is quite free to say 'schon wieder diese dumme Fliege.' Or he may point out of the window 'einen schwarzen Hund' or 'die Wolken am Himmel.' In this way the whole class as a social unit 'thinks together *in German.*'

Miss Olson's paper was as follows:

"The aim of the German lesson has always been to develop a knowledge of the German language, that is, the ability to speak, read and write German easily and naturally. We have for the most part not even been pursuing this aim directly. We have been teaching rules and paradigms of grammar and translation, hoping that real knowledge of German would come as a by-product.

"We have now come to know that as we 'learn to do by doing' only, we must give practice in speaking, reading, writing and thinking German in every lesson. We must *use* the knowledge we gain and make it the means by which we acquire further knowledge and power. The task of intelligent guidance in this process is not impossible for the average teacher. If she holds up a piece of paper and says, 'Das ist das papier' the class will understand and can soon be brought to answer the question 'Was ist das' using 'Pult, Tisch, Fenser, Feder,' etc., in the nominative case in sentences. They can be led equally easily by the question 'Wie ist der Ball, etc.' 'Was ist rund, grun, braun', etc., to use adjectives describing things shown in the room and in pictures. 'Die Farbe der Blume, des Pultes, etc. die Form des Balles, das Kleid des Madchens,' etc., can then be introduced and practiced in various genitives given. Later with 'haben, sehen, horen,' etc., the accusative of the words learned, as well as new ones, can be used, and then the dative with 'geben zeigen senden holen bringen,' etc. Explanations must be given in English as to how sounds are made. Words should be pronounced and written (always in sentences) before the printed page is shown, especially in the early stages. New material must be presented slowly so that the student may assimilate and make automatic, the use of expressions given. The book should be used to give review of work covered and developed orally by teacher and class. The exercises, written and oral, and the memorizing of the 'Lesestuck' can then be assigned for home work. By this method weeks are required to cover, say the four cases, whereas the old method disposed of these in a lesson or two, but the class develops power and habits of correct usage which even older students by the old method have not yet acquired.

"Excluding English from the classroom we may vitalize practice by varying its subject matter and adopting to our use all the incidents in and about the school. Write notes to the boy who is ill; write birthday notes; send German telegram to the school orator on the day of his contest in another town; ask a boy to bring water for the flowers, to close the door, open the window, find the chalk, distribute papers, go on errands, etc., the request and response being in German.

"Connect words with the ideas for which they stand rather than with their English equivalents. To this end doors, windows, furniture, pictures, objects, and actions must lend their aid. To collect such pictures and objects as will further this aim and give variety and interest to the learning process, and ease and force to the teaching process is an important part of the teacher's preparation for the lesson.

"Every lesson should be an exercise in speaking, reading and writing German. The writing may be to dictation of the 'Lesestuck' assigned and prepared; it may be the reproduction of it from memory, after it has been discussed and half memorized in the question and answer exercise; or we may have the translation exercise from English to German written. To make the latter effective it is well not only to correct and explain the errors, but to require the class to be ready to reproduce the correct forms from memory without the aid of the corrected manuscript on the day following. This can be done in a blackboard quiz, each pupil writing an English sentence from the exercise on the board and under it the German, which can then be graded before the class. To clinch further the correct forms the teacher may, just before the board quiz while the class is eager for perfect mastery, let them repeat rapidly after her the correct German sentence in chorus, stopping only when a question arises about some detail overlooked or forgotten by someone; this without the corrected manuscript. The blackboard quiz is one of the most effective means I know for getting a class to master a definite set of correct forms.

"The conjugation of sentences is a valuable form of practice in correct usage. The paradigm, 'der gute Mann, des guten Mannes, dem guten Manne,' etc., however well learned is insufficient in producing habits of correct use of the weak adjective. Much more effective is the conjugation of sentences involving each case, as for example: 'Ich gebe dem guten Manne einen apfel,' 'Ich gebe ihm einen rohen Apfel,' etc. We thus teach the verb and give practice in the correct use of adjectives and nouns at the same time. In the more involved forms which appear later in the course such sentence conjugation is invaluable. When a class repeats correctly in all tenses and persons, 'Ich setze mich auf den Stuhl und lese ein Buch,' or 'Es glingt mir die Lektion zu lernen weim ich studiere' they are in a fair way to the mastery of the points involved in these forms and to the establishment of automatic control of the same in speech and writing. Most texts have come to recognize the value of such exercises, but no text or person can prescribe the specific amount and quality which may be profitable for a given class. When we consider how much we can pack into small compass and reinforce by repetition in such conjugation exercises, how varied and interesting it can be made, how effectively it can be used in chorus drill, and how much practice it takes to establish correct habits, I think we need have little fear of resorting to it too frequently.

"The question and answer method is of course never discontinued in the German class-room, whether the class be in its first or its fourth year of study. After the first year the bulk of the work being based on a reading text, the process is in a way simplified; this, if the text is wisely chosen, if it is simple and lends itself easily to reproduction in question and answer, if it repeats idoms and words often and introduces new ones not too rapidly, and if the material is interesting. A class should learn something each year of Germany itself, its history, legends, great men and movements, beautiful and interesting places, and its charming stories and plays, as well as the mastery of the essentials of its language. The time allotted for all this is unfortunately short, and the conversation method demands that we thrash out by question and answer and drill, in German, not only the content of the lesson but the aplication of its words and idioms in ways that shall give them permanence in the learner's experience. The class can and should read more than can be covered in the recitation period. Simple matter can be read outside of class independently and poems can be memorized. This extra work can be taken care of by setting aside a day now and then, say every other Friday, for reports on work done out of class.

"These are but a few practical hints condensed into small space, and calculated to be suggestive to the teacher to whom the so-called direct method is new and untried. If she has established sufficiently the conviction that the bulk of the teaching and response in the classroom should be in the German tongue, that the class must learn German by speaking it, writing it, and reading it, and thinking it, that each lesson must be based on knowledge previously acquired and lead to one similarly planned, we may trust that her own resourcefulness, her common sense, and the inspiration of the hour or moment, coupled with careful thought and planning, and the help of a well-chosen text based on the method, will carry her through to a successful issue."

Following is a summary of the French and Spanish Round Table discussions:

The group took up the discussion of the topic: "How to encourage the Introduction of French and Spanish into our High Schools."

By agreement every one of those present offered his suggestions, and many valuable ideas were given. The following were the chief thoughts presnted:—

It would be best to select a few strategic points in the state where these languages were not yet firmly established, rather than to undertake to scatter our energies too greatly.

Spanish was receiving considerable stimulus from commercial organizations and interests, the Pan-American Union and other societies for the promotion of relations with South America and other Spanish speaking lands. Co-operation with such agencies should by all means be sought. The idea that French ought first to be urged upon a high school rather than Spanish was advanced, but it was argued in reply that the introduction of Spanish was in itself highly desirable, and that once Spanish was well started in any community French would almost certainly follow. In this connection the New Trier High School was cited in which the balance of German, Spanish and French was almost equal.

It seems that the idea that French is a subject fit rather for private schools and finishing academies for young ladies has some vogue. In reply it was stated that not infrequently girls went to such schools to get French, since this subject was not offered in the high schools to which they otherwise would have gone. Moreover, French was an absolute requirement in some women's colleges in the east. Hence it seems wise to urge French because of this requirement.

It was suggested that statistics be gathered and a colored map or chart be prepared by which the disparity in the middle west between French and Spanish on the one hand and German on the other could be clearly and convincingly shown. The question could then be asked why is such an inequality to be found in the middle west, and not in the extreme east or extreme west. In this connection it was stated that the population in the middle west was more prevailingly Germanic, which fact explained the introduction of German rather than a Romance tongue when a foreign modern language was to be introduced. Not until this Germanic preponderance in the population shall have yielded to a more complete Americanization, could this situation well be otherwise. In another generation greater equality would be possible between the demand for German and the demand for French and Spanish.

The initial difficulty of persuading college students to prepare themselves as Romance teachers in the face of the difficulty of finding them positions was dwelt upon. How could this endless chain, this 'vicious circle' be broken into, for, if we have no positions to offer candidates, we shall not have candidates, nor shall we have any students coming to the university with sufficient start in a Romance tongue to become good candidates for a teaching post in the four years of college work. At what point of this circle should the attempt be made to destroy this aparently hopeless situation? In this connection it was shown that the situation had already greatly improved in the past few years, and attention was called to several localities where Romance work had started in recent years and seemed to be holding its own.

The co-operation of the Alliance Française in the effort to introduce French was urged by several. The help of our Latin departments already firmly established was also urged, and it was felt that the departments of Latin and Romance languages could be of great mutual helpfulness. This was especially desirable in schools where Latin only is now taught and no modern language as yet.

It was felt that clubs of women, principals of schools, and other school authorities were the points at which influence might be brought to bear. The idea was also suggested that an appeal to our German teachers to adopt the broader modern language point of view, rather than the narrower advocacy of German only might in many cases bear fruit.

The group voted to suggest to the general modern language committee that its work for the coming year be devoted primarily to the effective establishment of a bureau of information and general helpfulness at the University for teachers of modern languages, especially for teachers who had not enjoyed foreign residence. It voted also that the second activity of the committee be the gathering of statistics regarding the language situation in the entire country with a view to bringing the situation in Illinois closer to the norm.

Music Section.

The Music Section of the High School Confeernce convened on Friday, November 21st in Room No. 126, University Hall, at nine o'clock, Assistant Profesor Constance Barlow-Smith, presiding.

In the absence of Miss McCall, Mrs. Elizabeth McNair was appointed sec'y pro tem.

The minutes of the last general meeting and of the last committee meeting were read in order that those who were present for the first time might realize the sort of work that was in progress.

The chairman stated briefly the purpose of the conference, calling attention to the fact that the music section had to do with the problems that concern the High Schools of the state of Illinois. She said that an effort was being made to formulate standards for the work so that the subject might be placed upon the same basis of credit toward graduation in the High Schools as any other subject. She spoke of the interest that was growing more manifest every day throughout the state in the music education of the child, and then read the following resolution which was adopted by the Illinois Federation of Women's clubs in convention assembled at Evanston, November 14th, 1913:

Whereas: Music is essential to human happiness, since from the cradle to the grave it meets an innate need of the human heart; and

Whereas: Music exerts a powerful influence for good or for evil upon the feelings, the emotions, and the conduct of a people; therefore

Be it resolved: That Music Should Be Considered an Indispensible Study In The High Schools of Illinois.

Professor Smith said that by the above action the Federated Club women were pledged to encourage the proper teaching of music in the High Schools of Illinois.

Nothing of greater importance has happened to encourage good music in Illinois in recent years, since the Illinois Federation of Women's Clubs has a membership of forty-five thousand women.

Mr. Osbourne McConathy of Northwestern University, Evanston, changed the title of his paper from "Outline of Work that should be accomplished in grades preparatory to music courses in the High School" to "What should the School offer?"

His discussion of the topic follows:

"Coming so recently from Boston, I might reasonably expect forgiveness if I adopted the Yankee trait of answering one question by asking another. Instead of the question, 'What should the pupil accomplish?' I might ask, 'What should the school offer?' Candidly, I believe that this is the way the subject should be approached. And if we do approach it in this manner, we are inevitably led to ask still a third question: 'Why are we teaching music in the public schools?'

"Will you forgive me if I avail myself still further of my acquired New England habit and reply to my last question first, affirming: First, that the teaching of music in the public schools is *not* primarily to teach a string of names of great composers, their birthdays and the names of a few of their masterpieces. Second, that it is *not* primarily to teach breathing between phrases, nor the use of the head tone. Third, that it is *not* primarily to teach the meaning of Italian tempo marks or other so-called marks of expression. Fourth, that it is *not* primarily to teach facts about the staff, clef, notes, etc., nor to develop the ability to read music with more or less fluency. All these things are incidentally important. Some of them are immensely important. But to teach them and then stop would in no wise fulfill the aim of music teaching in the public schools.

"What then is the real aim of this instruction? Surely, we may justly affirm that the real aim is *the building of character.* While I would not underestimate the value of music teaching for the sake of music itself, I would urge that we must get far more out of the music lesson than a knowledge of music notation or the ability to sing a song; more than the names of composers or the ability to recognize their masterpieces. The music lesson must develop our cheerfulnss, peace of mind, hopefulness, buoyancy; our love of nature, of our neighbors, our country, our God. The school music lesson should develop discipline, not of the school room alone, but, and of greater importance, of our selves—our bodies, our minds, and our hearts.

"Can these things be measured? Can we set a rule and say, 'Here shall the work of the grammar school be completed; here the work of the high school begun'? Character is too complex a thing to be thus measured. Character shows itself in the child's every activity, in and out of school. To judge the results of our music instruction, we must follow our pupil's every move, every thought, even to the inmost recesses of his heart. If we would attempt to estimate the value of our work, we must go even further and discover its influence on the life of the community as a whole. We might well begin by asking a few such questions as these: Can we observe, as the result of our labors, a perceptible countertendency to the vogue of cheap and trashy music? Do we find groups of people gathered in the home or concert room to enjoy good music? Is the singing in our churches and our Sabbath schools improving in devotional quality? Do our young people show an inclination toward elevating diversion, or do they walk the streets and frequent the melodramatic shows and cheap vaudeville?

"The answers to these questions and to many more that any one of us could easily suggest, will indicate the measure of our success as teachers and, correspondingly, the measure of the advance made by our pupils.

"Of course I realize that the foregoing statement is not a definite reply to the question under discussion. However clear it may be to the members of the community in which we work that our labors are bearing definite fruit, either in improving social conditions or in staying the progress towards worse conditions, such influence is difficult to guage or to standardize. Yet it is this influence which must be our criterion of success. In one town the pupils may sing well and read music fluently, may recite names of musicians and their compositions glibly, and yet not carry the influence of these studies away from the school-room. On the other hand, in another town where the apparent results may be far less striking, the influence for good may be spreading abroad and making itself felt in the home, the church, and the social life in general. Is not the teaching in this community more successful than in the former place?

"History has too often demonstrated that musical ability, in itself, is not a true indication of character. Of course we endeavor to teach good singing; we strive to have our pupils read music well. But the ability to sing and to read must not be considered the end of public school music education. These things are really but a means. These things are the tools with which the true teacher attains the real end that he is seeking—the building of character.

"It is clearly impossible to assign certain phases of character development to certain grades, and yet our answer to the question under discussion must be based upon the positive assertion that the music lesson should contribute directly to the child's inner growth, and that this growth in finer qualities should make itself apparent both in the child himself and in the general life of the community.

"Nevertheless while the *measurement* of the influence of the music lesson in character building is impracticable if not absolutely impossible, it is both possible and practicable to determine the *material* to be used by the teacher and the *general methods* by which the teacher must bring about the desired results.

"The material is music itself. Therefore our outline should concern itself with the types of music best adapted to the teacher's purpose. With regard to methods, we should discuss the best means for presenting this material to the children. Furthermore, the limitations imposed upon the school music teacher by the meager time allowed for his subject make necessary a very clear and definite plan of work.

"Music instruction in the primary and grammar schools may be classified under four general headings:

Music appreciation
Voice Culture
Interpretation
Sight Singing

These subjects are so interwoven that few lessons fail to combine two or more of them, while many lessons combine all. Nevertheless in order that our purpose in each lesson shall be clear in our own minds, such a classification is helpful. Let us consider the ground to be covered under each one of these general headings.

"By *music appreciation* I mean an intelligent love of good music, based on a more or less cultivated and discriminating taste. Good music, through which the student's taste may be cultivated, is brought to him in the schoolroom in two ways: first, through the songs that he sings, which should always be music of the highest type; and second, through listening to music. This latter is effected by means of the so-called talking machines, the mechanical piano players, by the supervisor, teacher or visiting musicians, by talented students, the school glee club and the school orchestra. Occasionally, it is possible to take our pupils to concerts, or even to have them take part in concerts of artistic excellence.

"The first aim, therefore, in the subject of music appreciation is to cultivate an interest in the music performed, and, through that, to develop a love for it. Then by judiciously selected programs and tactfully presented suggestions, the student may be guided in his listening. The various characteristics of the compositions may be brought to his attention and as he listens he may learn to hear more and more the purpose of the composer in the composition. Incidental to this study, the student should learn something of the stories of the selections, and also something of the lives of the composers and of the times in which the music was written.

"How far should we attempt to carry this study in the grammar schools? If begun gradually and carried on consistently, there is no reason why the student should not have heard a large amount of the best music during his primary and grammar school life. At the close of the eighth grade he should know by hearing at least one composition by each of a number of the great composers, should know one or more characteristic folk songs of each of the principal nations of Europe, should know by hearing some of the standard selections for the piano and violin, some of the world's great songs, some of the great operatic arias, and the tones of some of the world's great singers.

"Is this too much? In some communities I should say that these results could not at present be accomplished. In the first place the school authorities are not yet alive to the possibilities in music instruction and will not grant the means for carrying on such work as I have described. In the second place many supervisors are not yet ready effectively to direct these studies. However, the ambitious and resourceful teacher will frequently find ways and means to accomplish the seemingly impossible, while the general awakening in music education is sure, in the course of time, to make itself felt in the school committees of even the most conservative places. In outlining a standard we must recognize the difficulties that many teachers will experience in carrying this work into effect: our standard should not be placed so high as to discourage teachers in the less fortunate places. On the other hand, in framing a standard we must not lose sight of our ideals. And in order that we may not consider these ideals impracticable, it will be well to realize that already courses in music appreciation along the line suggested above are in successful operation in many places.

"Under *voice culture* I should include voice placement, breathing and the proper emission of vowel and consonant sounds. With the advent of adolescence, problems arise which seriously complicate the matter of voice training in the schools. Some teachers would avoid the difficulties by discontinuing the singing by the boys during the changing period. Not only do I think this unnecessary, but I believe that a judiciously conducted singing lesson may do much to counteract the harmful use of the voice on the playground and elsewhere. While the head voice of the child is the only tone to be used before the change of voice, the youthful bass singer must begin to sing in the chest voice. By the end of grammar school life the pupil should know how to form his tone correctly, how to breathe naturally, sustain a tone steadily, and use the organs of articulation properly.

"I believe that this may be brought about in two ways, the choice of which must depend upon the teacher; first, conscious instruction in these various matters; second, conscious imitation of a good example. The beautiful tone quality in numberless classrooms is ample evidence that this attainment is practicable in every classroom.

"The topic *interpretation,* may be divided into two parts: first, the mechanics of interpretation, by which I mean following the so-called marks of expression; and second, the feeling and expression of the emotional content of the music. We may well expect the student who leaves the eighth grade to understand and follow the better-known tempo marks, also the various kinds of dynamic marks. Sensing the emotional content of the song and giving it expression, while much more subtle, is nevertheless possible to a certain extent. The teacher who would train his pupils in this art must always make the poetic meaning of the song a matter of careful consideration from the earliest years. Further he must train the pupil to think and to feel the sentiment of the song even when singing it at sight.

"While the emotional interpretation should be studied, we must keep clearly in mind the fact that so-called 'feeling' is not a thing to be added to a song after the notes are learned, as one might add butter to a slice of bread. The sentiment is an integral part of the song, and our children should be taught to give it due consideration even in the first steps in studying it.

"I believe that it is distinctly possible and eminently desirable that our pupils, on leaving the eighth grade, should color their singing with the emotional quality of the text of their song. Can this be done? Most certainly it can. I have heard it, and, doubtless, you have heard it too.

"Under the heading *sight singing* I would include all the contributing studies which bring about the ability to interpret music symbols at first sight. In my opinion an eighth grade class should be able to sing, at sight, with words, a three or four-part tune of moderate difficulty, such as the Dykes, Barnby, or Sullivan hymn tunes. Individually the pupils should be able to sing melodies which include all the simpler tone relations and time values. Furthermore the students should be able to express these thoughts in music notation either as answers to questions in music theory or as written dictation. While certain individual pupils would never be able to pass these requirements a well organized music department should so reduce the number of such pupils that the percentage of failures would be no greater than the percentage of failures in arithmetic, grammar, history or spelling. I know that this standard is attainable, for I have seen eighth grade classes where between ninety and ninety-five per cent of the students could meet these requirements.

"And now to summarize:*

I. No statement of the attainment in music to be expected of public school students leaving the eighth grade would be proper or complete that did not emphasize two facts: first, that the great objects of school music are the building of character in the child and the cultural elevation of the community; second, that these two aims are not susceptible to measurement.

II. Therefore the question before us is, 'What opportunity should the school system offer the child?' rather than, 'What should we expect from the child?'

III. Nevertheless in a well ordered school system there should be the following definite results, which are susceptible to tabulation.

a. In *music appreciation*: At the end of the grammar school stage the student should show evidence of an acquaintance with good music, vocal and instrumental, in the following ways:

> He should be able to sing a certain number of standard songs from memory.
>
> He should recognize themes from some of the larger instrumental and vocal compositions.
>
> He should have associated with some of these examples of music literature the story of their origin.
>
> He should have some biographical knowledge of a few of the great composers.

b. In *voice culture*: The pupil should be able to sing several standard songs, previously prepared, with distinct articulation, agreeable tone, and correct phrasing, implying breath-control.

c. In *interpretation*: The singing of such selections should show a feeling for the spirit, tempo, and character of the song, implying knowledge of the common marks and terms by which these are suggested.

d. In *sight singing*: The pupil should give evidence of:

> The ability to sing at sight, with words, a melody of moderate difficulty, such as the easier hymn-tunes and folk songs; or a part in a three or four-part song of similar difficulty.
>
> The ability to sing at sight an eight-measure phrase, without words, in any major or minor key, with any of the ordinary time or tone relations, using g-clef or f-clef.
>
> The ability to express in notation the fundamental principles of time values and tone relations, using two clefs, all key signatures in major and minor, and the five characters used to represent chromatic tones.

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*In framing these requirements I have availed myself of work on this subject by a committee of members of the Music Teachers National Association. Their report will be found in the Proceedings for 1908.

"The following list of songs was prepared by a committee of the Supervisors' National Conference, and is recommended for general use in connection with requirements b and c above, and also as a part of the first section of requirement a.

America.
Annie Laurie.
Auld Lang Syne.
Blow Ye Winds, Hi, ho!
Dixie.
Drink to me Only with Thine Eyes.
Flow Gently, Sweet Afton.
Home, Sweet Home.
How Can I Bear to Leave Thee?
Love's Old Sweet Song.
Old Kentucky Home.
Nancy Lee.
Old Folks at Home.
Star-spangled Banner.
Sweet and low.
The Minstrel Boy.
Rounds—Row, Row, Row your Boat
Lovely Evening."

Mr. McConathy was requested to put his summary upon the blackboard so that it could be discussed. The outline was an adaptation of that approved by the Music Teachers' National Association in 1908.

Miss Cleda Moses of Marion Township High School was asked to open the discussion. She said that she felt that the children were not very generally taught "clear articulation." Also that, while her students were very much interested in music, they had little or no knowledge of tone quality, and that very systematic work should be done in the grades along these lines.

Miss Lucile Mitchell of Gibson City expressed the belief that the outline might be accomplished under favorable conditions. Superintendent Waits of Princeton objected to sight-singing, or reading, being placed last in the outline. He said that boys and girls in his higher grades could sing songs and concert numbers beautifully, but that they failed to be able to read their parts, either in school or church. He said they seemed to appreciate music, and that they enjoyed it. He raised the question, "What was wrong"? Was there not some definite place where the (to him) necessary drill might not belong? Mr. McConathy said that there was, and also answered his first question by saying that the pupils were poorly taught.

Short talks were given upon music work in the grades by

Miss Mabel Glenn, Bloomington.

Miss Gertrude Ward, Urbana.
Miss Guwa C. Kelley, Clinton.
Miss Jessie Grossman, Savannah.
Miss Lottie Duncan, Martinsville.
Mr. W. U. Moore, Carbondale.
Mr. R. N. Carr, Blue Island.
Miss Clara Renfrew, Bement and Cerro Gordo.
Miss Violet V. Collins, Chicago.

The discussion was closed.

The chairman said that she was ready to entertain a motion either for or against accepting the outline as presented by Mr. McConathy, to represent work worthy of entrance credits to the High School. Moved by Mr. E. L. Philbrook and seconded by Supt. M. L. Test, that the outline as presented by Mr. McConathy, be accepted by the Music Section as being worthy of entrance credits to the high school.

Motion carried unanimously.

Superintendent M. L. Test of Mt. Sterling, who has been an active member of the music committee for two years, gave a ten-minute talk upon Observations of a Superintendent. He had observed some very interesting facts, one of the first being that superintendents very frequently did not observe and interest themeslves in the music teaching. Also that boys and girls in the High Schools loved to sing and to hear good music. He related how the fourth year class last June had purchased a Victrola and presented it to the school for the future classes. He told of inefficient and efficient teachers who had come under his observation, of the powerful influence for order and good fellowship that music was exerting in the high school at Mt. Sterling and of the educational value of the subject as a regular study.

The syllabus of a Music Appreciation Course for the High Schools which had been prepared by Assistant Professor Smith at the request of the music committee, to comply with the course as adopted the previous year, was distributed. She explained that this course was presented to meet the needs of schools where the subjects of Harmony and Musical History could not be treated as separate studies.

Adjourned until two o'clock.

Music Session 2:00 P. M.

The meeting was called to order promptly and the matter of the new policy, that of rotation of office, as adopted by the general committee of the confernce was discussed. The chairman explained that new members were to be elected upon committees in all sections and that she wished to assure those present that the Director of the School of Music and the Public School Music Department would welcome a new chairman and assist in the work of the Music Section in every way possible. At her call for nominations Superintendent Test took the floor and said that after having been a member of the Music Committee for ten years he felt compelled to say that this is not the time for Professor Smith to resign the chairmanship. He was declared "out of order," but succeded in putting the folowing motion which was seconded by Miss Gertrude Wood: "Moved that Professor Smith be made chairman of the Music Section by acclamation, with power to appoint the other members of the committee." Unanimously carried. Professor Smith thanked the members of the Section and said that she appreciated both the honor and the confidence expressed in the motion, and that she would endeavor to serve the department for the ensuing year.

Before discussing the Syllabus on High School Music, Professor Smith said that she had provided for an alteration of subjects, and if there were any questions to be asked she would gladly answer them.

Mr. McConathy asked the meaning of the term "appreciation" and was refered to paragraph A, "Musical Appreciation" on the sheet that was added to the syllabus, which described the course in Music Appreciation that was adopted by the Section last year.

Miss Collins asked if the course was intended for one year or two. Answer—It was planned for one year if the proper amount of time could be allowed for outside preparation and certain pre-requisites required, but, that it could be extended to two or even to three years if necessary.

Syllabus of a Music-Appreciation Course,

by Assistant Professor Constance Barlow-Smith.

First Month (six lessons).

Organization of classes.

Testing of voices.

Seating according to voice parts.

Order of lessons established, subjects alternating.

Familiar songs, with especial emphasis laid upon interpretation, Enunciation, etc.

Review of fundamental principles of musical notation. Symbols and signs written correctly in note books.

Major scales written in note books outside of school hours. Corrected in class.

Minor scales written in note books same as major.

Breath exercises to insure easy inspiration and control of prolonged expiration to be a part of each music period. Also suitable Vocalizes for controlling and blending the voice.

Reading of Simple One, Two, Three, and Four-part songs and hymns unaccompanied.

Lectures—The Beginnings of Music. The Physiology of the voice.

Listening Lesson—To broaden the student's knowledge of musical literature. Local talent may be secured or reproduced music played upon the Victrola (or similar instrument), or upon the Player-Piano.

Second Month (eight lessons)

Intervals defined, named, played, sung, and written.

Degrees named.

Tonic Triad written in all minor keys, outside of school hours.

Tonic Triad written in all major keys, outside of school hours.

Choruses selected for the purpose of creating a desire upon the part of the class to sing for the joy of singing. The following points are essential to good chorus singing and should be carefully considered in the process of drilling, namely:

Fresh air,
Poise.
Attack.
Shading,
Clear-cut Articulation.
Intelligence of Text.

Musical History Lectures. The Music of the Ancient Egyptians, Greeks, and Romans. Notes to be taken in class. Collateral reading or text book study.

Listening Lessons with incidental instruction.

Third Month (seven lessons).

Key relationships explained. Illustrations noted in songs and choruses.

Drill in hearing simple modulations, major to major, major to minor, minor to minor.

Drill in singing simple melodic modulations.

Chromatic Scale written. Chromatic Intervals studied.

Consonances and dissonances.

Sight Reading—Four-part Hymns and Songs unaccompanied.

Hunting, Harvest, and Thanksgiving texts.

Musical History Lectures—Music of the Ancients (contin.)
Early Church Music.
Collateral reading or text book study.

Fourth Month (seven lessons)

Primary and Secondary Triads. Drill in hearing and writing.

Positions and Inversion of Triads. Drill in hearing and writing.

Early Christmas Songs, Chorals, and Choruses.

Musical History Lectures—Bell Music. Christmas music of the early churches. Traditions. Writers of Christmas music. Selections from Handel's Messiah, played or sung for class.

Fifth Month (seven lessons)

General review of Theory.

Fifty questions in Musical History, in review, ten of which will be given in examination.

Test in theory.

Test in musical History.

Choruses and their Elemental Analysis as to Key, Time, Phrasing, Marks of expression, Rhythmic movement, Comparison of Tonal and Rhythmic groups, Simple Modulations.

Listening Lessons—Programs planned to have material augment the work of previous lessons. Incidental instruction.

Sixth Month (seven lessons)

Construction of Lyric Melody and original work.

Drill in writing major and minor Triads from various Degrees.

Drill in writing chords in various positions.

Drill in singing chords.

Choruses with elemental analysis. Texts varied. American Patriotic Songs, giving history in connection with national Hymn and National Song. Patriotic Songs of other nations.

Musical History Lectures. Early Church Music (continued). Bach and Handel.

Listening Lessons. Selections from Bach and Handel.

Tests.

Seventh Month (eight lessons)

Original melodies in four, eight, and sixteen measures.

Chord Progressions. Written work.

Cadences. Written work.

Dominant Seventh Chord written in all keys.

Harmonization of simple melodies continued.

Choruses from Haydn and Mozart with elemental analysis.

Musical History Lectures—Haydn and Mozart. The develoment of the orchestra. Collateral reading or text book study.

Listening lessons—Selections from Bach, Handel, Haydn, and Mozart.

Eighth Month (eight lessons)

Hymns and simple choruses analyzed from book.

Ear-Training and Sight Reading emphasized.

Simple melodies harmonized with Tonic, Dominant, and Sub-Dominant harmonies.

Choruses from Beethoven, Rossini, Weber, and Schubert.

Musical History Lectures—Beethoven, Rossini and Schubert. Collateral reading or text book study.

Listening lessons—Selections from Beethoven, Rossini, Weber, and Schubert. Incidental instruction.

Ninth Month (eight lessons)

General review in Harmony.

Elemental analysis of selected choruses.

General review in Musical History.

Musical History Lectures—Folk music of all nations, Mendelssohn, Schumann, and Wagner. Collateral reading or text book study.

Choruses, selections from the works of Mendelssohn, Schumann, and Wagner.

Listening Lessons—selections from varied sources.

Equipment.

The following equipment is desired:

An adequate supply of suitable text books.
An adequate supply of suitable reference books.
A Piano (Player-Piano preferred.)
A Victrola or similar instrument. Records.
A good musical encyclopedia.

It is possible to have good work with smaller equipment. Excellent results have been accomplished by a competent teacher with good text and reference books, and a piano.

Some good High School Song Books.

The Halcyon Song Book—Silver Burdett & Company.
The Abridged Academy Song Book—Ginn & Company.
The Laurel Song Book—C. C. Birchard & Company.
Art Songs for High Schools—American Book Company.

Musical History Reference Books.

Hamilton's Outline of Music.
History of Music to the death of Schubert—Paine.
History of Music—Pratt.
World's Earliest Music—Smith.
Music of the Bible—Strainer.
Hymns Historically Famous.
Orchestral Instruments and their Use—Elson.
Grove; Dictionary of Music and Musicians.
Riemann; Encyclopedia of Music.
Harmony reference books—Schwartz, Clark, Chadwick, Jadassohn.
For the Victrola—What we Hear in Music.
Desk books—Elson, Musical Dictionary; Banister, Music.

Adopted 1912.

A. Musical Appreciation, based upon the standard choruses and instrumental selections from the works of the great composers of each epoch, to include contributory study, added instruction in Theory, Sight-Singing, Ear-Training, Musical Forms, and Construction of Lyric Melody. Two and three period Song Forms, Opera, Oratorio, Instrumental Forms, Early Dances, The Suite, Rondo, Sonata, The Symphony, and Modern Composition. Analysis and Musical History. The subject to be on the following basis of time and credits.

1. A minimum of two periods per week for two and one-half years with double credits because of required and proven preparation, or

2. A minimum of two periods per week for two and one-half years with single credits without required outside preparation.

B. Harmony.

1. First Year.

a. Elements of musical notation; Construction of Major and Minor scales; Keys; Signatures; Intervals, general and specific; Key relationships; Consonances and Dissonances Triads; Primary and

Secondary; Inversions of triads; Chord Progressions; Simple Melodies harmonized with Tonic Dominant and Sub-dominant harmonies; Harmonic Analysis; Original Work.

2. Second Year.

   Review of Triads; Seventh chords, (Primary and Secondary); Non-Harmonic tones; Sequences, Chromatic chords; Diatonic, Melodic and Harmonic Modulations; Harmonic Analysis.

Mr. E. L. Philbrook of Rock Island opened the formal discussion.

He thought that the work was too much for his schools, as he had about one hundred and fifty voices and could not test them, nor seat the pupils according to parts, for the singing lesson. He objected to outside preparation, as some would have to drop the study for lack of time. He had submitted the syllabus to his pupils and they had objected to the outside work. He thought the major and minor scales had been written in the grades and it was not necessary to have them written in High School note books. Also he thought the review unnecessary and did not see how he could make a class exercise of correcting note books. He stated that he was teaching all of these subjects and giving credits for them, but he failed to say just how much time the pupils spent in the pursuit of musical knowledge, nor how much time he was able to give to the High School classes. It was evident from the first that Mr. Philbrook thought that the syllabus struck too high a mark.

Profesor Smith urged the speakers to remember that a standard of Eighth Grade work had been accepted and that the syllabus was to be considered as a continuance of the subject. She also reminded the members of the Section of the course in Harmony that was accepted last year.

Miss Ailsie Goodrick of Jacksonville was the next speaker. She said that the large percent of rural students that entered the High School each year, without a knowledge of the subject, made it imperative upon most teachers to spend at least six months in review, writing scales nad in general notation work, before they could take up the work of the syllabus. She emphasized Ear-Training as a feature of the work that took a great deal of time. She hoped next year, when the new building was completed, to be able to have regular class work. At present she is obliged to have general lessons. With the present conditions it would take two or more years to complete the syllabus.

Miss Minerva Hall of Decatur reported systematic work in Harmony, Musical History and chorus singing in Decatur. She said music appreciation could be taken in the Conservatory after school hours if the pupils wished and credit was given for the work. Mr. McConathy asked if the syllabus was intended for special students or for all students. Professor Smith said that superintendents usually regulated matters of that kind, but that she preferred to have boys and girls of High School age elect to study music and not make it compulsory. Mr. McConathy asked what was to be done for the boy who did not elect music. Answer—The general singing period is probably all that he wants.

Mr. McConathy thought that more could be taught than the syllabus called for, but he did not say as to the length of time that it would take.

Miss Margaret Park of Aurora had no opportunity to say the things that she had intended to say, because they had already been said. She wished, however, to emphasize that Musical History was to her mind, the connecting link between Grade and High School work, and was doing some appreciation work in general.

Miss Violet Collins of Chicago asked if applied music should be credited. Professor Smith explained that it was in a number of cities, and should be, but the question involved others that must be settled in the communities where it is possible.

It was evident from the discussions that conditions in the schools that were represented in the Music Section, were widely different. Some supervisors were giving credits for their subjects that seemed out of proportion to the time spent in preparation by the pupils—others could not secure enough credits for the time that was required for the work. Some supervisors were teaching Musical History, Harmony and Appreciation as separate studies—and in other schools chorus singing twice a week was "all that there was time for." Because of these varied conditions, Professor Smith suggested that the Syllabus be worked out to see whether it was practical or not and that a report be given at the next annual meeting of the High School Conference at the University of Illinois.

Miss Jessie Grossman moved that the suggestion be accepted—seconded by Miss Collins.

The Music Section adjourned to the Auditorium to listen to an educational demonstration of reproduced music which was given by Mrs. Francis E. Clark with the victrola, and by Sibyl Sammus-McDermid and James G. McDermid, with the Conover-Inner Player. This concert proved to be a very special feature of the conference, and was highly appreciated for its excellence.

PHYSICAL SCIENCE SECTION.

In the absence of Chairman Elliott, Mr. C. M. Wirick of the Crane High School, Chicago, was elected to fill the vacancy. A nominating committee was authorized to make necessary recommendations, and then the program of the morning was taken up. Professor W. A. Noyes of the University spoke on "Recent Work in the Field of Chemistry." He was given a vote of thanks for his interesting and suggestive paper. Professor Adams of Normal University read a paper on "Topics in Chemistry Which Offer the Best Opportunities for Applications in Daily Life."

Discussion of the paper was given by Dr. Hessler, Dr. Balke, Professor Barber, Professor Adams, and others. The section then adjourned to visit the Chemistry Lacoratory.

At the afternoon session, Dr. H. S. Pepoon of the Lake View High School, Chicago, spoke on "General Science in the High School." An animated discussion followed. The nominating committee reported as follows:

Executive Committee:

Chairman, C. M. Wirick, (3 years), Secretary, F. R. Watson, (2 years), J. P. Drake (1 year); member of committee on egneral science in high schools, H. S. Pepoon.

Dr. Knipp gave an interesting experimental lecture illustrating the "Recent Advances in Physics." After adjournment, the Section was given an opportunity to visit the Physics laboratories.

F. R. WATSON,
Secretary.

Following are abstracts of the papers read:

Recent Advances in Chemistry.

Professor W. A. Noyes, Univ. of Illinois.

"The Journal of Chemical Abstracts publishes each year more than 15,000 abstracts of articles giving an account of new researches in chemistry. It is of course impossible to give any notion of the character of all of this work in a brief address. Instead of this, an account of a few of the most interesting recent advances is given.

"It is estimated that the supply of sodium nitrate from Chili will be exhausted within a comparatively few years, and chemists have been looking earnestly for some means of supplying the world's need of nitrates for agriculture and for manufacture from the nitrogen of the air. This problem has received, at least, a partial solution in two directions. First, in the preparation of oxides of nitrogen, and from these of nitrates by means of the electric arc, a manufacture which has been stablished on a commercial scale in Norway. The formation of nitric oxide is an endothermic reaction, which is favored, for that reason, by a high temperature. The synthesis of ammonia from nitrogen and hydrogen seems also to have been solved by Professor Haber and others in Germany. This synthesis is by means of an exothermic reaction for which a high temperature is unfavorable. The reaction must, therefore be hastened by a suitable catalyst and carried out at as low a temperature as is feasible. Since contraction takes place on the union of the elements, the reaction is favored by a high pressure, and it is proposed to use a pressure of more than one hundred atmospheres in the factory where ammonia is to be manufactured.

"The development of evidence as to the real existence of atoms has been quite rapid during the last ten years, and there is scarcely a chemist or a physicist who does not accept the existence of atoms and molecules as having been practically demonstrated. The study of radioactive elements and of many other phenomena has given us much new evidence as to the composite nature of the atoms, and a little beginning has been made in he study of the problem of their structure. There is some probability that we shall have a development of knowledge along such lines during the next few years, which will be somewhat comparable with the study of the structure of organic compounds, which has characterized the development of the last fifty years."

Topics in Chemistry Which Offer the Best Opportunities for Application in Daily Life.

Professor H. W. Adams, Normal.

We, as teachers of chemistry, know that every topic in a high school course in chemistry has its applications in daily life. We also know that not all of these topics apply with equal frequency nor with equal importance in daily life. We remember that the teaching of principles without concrete application in the life of the student does not make a very lasting impression. Convinced in our own minds that chemistry is the greatest of sciences, we are filled with a zeal for our students that they may get as comprehensive grasp of the science as possible. We have too often left the student to make his own application while we carry him on to the next topic, crying, as we believe, for treatment. The student has usually failed to do what we expected him to, consequently his chemistry becomes a matter of test tubes, flasks, and a laboratory.

It is a serious mistake to attempt to cover the whole field of general chemistry in a high school course, and we must learn to leave out those topics of minor importance that the more important ones may properly be stressed. On the other hand there is serious danger that, in our attempts to popularize high school chemistry by teaching the application, we neglect to lay stress where it belongs and fail to teach fundamental principles. In no science is it more imperative that the fundamental principles be well taught than in chemistry.

The appended list represents an attempt to organize the practical applications of a course in chemistry into groups of related topics. The list does not represent a course in chemistry. It is simply a suggested outline of topics that the teacher has in mind to emphasize during the course. No attempt is made to list them in the order in which they are taken. In fact, a given topic, as germicides, may receive attention as often as one of the germicidal substances is studied.

List of Topics.

The liberation of energy.

(a) From fuels, natural gas, coal gas, carburetted water gas, producer gas, acetylene, petroleum, kerosene, gasoline, alcohol, anthracite coal, bituminous coal, hand fired furnaces, mechanical stokers, the smoke nuisance.

(b) From Foods; carbohydrates; fats; proteins.

2. The carbon cycle.
3. The nitrogen cycle.
4. Potassium compounds and soil fertility.
5. Phosphorus compounds and soil fertility.
6. Soil acidity and means of correcting it.
7. The electromotive series.
8. Water supply. (a) Sanitary questions. (b) Hard and soft waters.
9. Ventilation.
10. Germicides. Hydrogen peroxide, chlorine, ozone, mercuric chloride, phenol, sulphur dioxide, sulphite, sodium benzoate, boric acid.
11. The silicate industries. (a) Glass. (b) Enameled ware. (c) Cement. (d) Clay products.
12. Mortar and patent plasters.
13. Matches.
14. Salt and salt products industries. (a) Chlorine, bleaching powder, hydrochloric acid, calcium chloride. (b) Sodium, sodium hydroxide, sodium carbonate, sodium bicarbonate, sodium sulphate, soap.
15. Corrosion of iron and steel.
16. Galvanized and tinned iron.
17. Paints. Pigments and vehicles.
18. Abrasives. Silica, emery, carborundum.
19. Primary and storage batteries.
20. Rubber.
21. The leavening agents.
22. Hardening and tempering steel.
23. Tungsten.
24. Textiles. Woolen, cotton, silk, linen, mixed goods, dyes, mordants; removal of stains.

Recent Work in Physics of Value to the Teacher in the Secondary School.

Professor C. T. Knipp, University of Illinois.

It is becoming increasingly more difficult for the teacher of physics in the secondary school to present the subject in a manner that keeps pace with the discoveries of modern research. Desirable as it may seem, the teacher, generally speaking, can not find time to consult first hand the almost unlimited researches published in the various scientific journals. We should not expect him to equip himself, by previous training and extra study, for the task of discriminating between that which is of a doubtful and that of a permanent value. The truth regarding new advances in physics reaches the text-books slowly, and rightly so. A great and fundamental discovery may be made, yet if there are doubts regarding it, which later research may clear up, it had better be treated cautiously in the text-book or omitted entirely. We hear much regarding the electron, yet it would be a mistake to base an elementary treatise on electricity and magnetism entirely upon the electron and its properties as they are at present known, though indications are that the high school texts of ten years hence will give it a very prominent place.

To enumerate and discuss fully the recent advances in all of the divisions of physics of value to the teacher in the secondary school is not attempted because of lack of time. Instead a detailed discussion is given of the properties of the cathode rays which form a part of the general study of electricity and magnetism. The subject has developed during the past fifteen years and the revolutionizing discoveries have forced chemists and physicists alike to change their conceptions regarding the molecule and atom.

The electron, its discovery, its properties, and the role that it is playing in present day researches were briefly discussed and a number of striking experiments showing the various phases of the above were performed.

SOCIAL SCIENCE SECTION.

Meeting of Social Science Section called to order 9 o'clock. Professor J. W. Garner, presiding. Articulation of courses in history and government, led by Bessie Leach Priddy, of Adrian, Michigan, High School. An abstract of her paper is here given:

"This problem of the Social Sciences in our national education lies at the very heart of our democracy. We are endeavoring to hand down to the rising generation the ethical, intellectual and practical experiences of the race, interpreted in the spirit of our national ideals. The matter of the selection and emphasis and interpretation of those experiences is in the hands of the social science teachers of this country. They may bring to the student the most potent messages of those who have gone before, they may breathe in his ear the holiest hopes of those to come.

"The abstract studies are only for what use life can make of them. It would indeed be a pitiable thing to devote the whole process of education to them and give no time to aiding the child to find out the meaning of life.

"The other day in reading Dr. Schlee's Report on the Public School System of the United States, I found these words: 'The peculiarity of nearly every branch of American civilization has originated in the circumstance that it developed on previously unbroken soil and started from an already high degree of culture; in consequence it progresses by zealously taking hold of every new acquisition and in many things rushes ahead of Europe while it is still backward in the perfection of indispensable preparatory steps and foundations.'*

"These remarks could well be applied to the condition of our history courses. We have plunged this way and that way in our grouping and selection of courses, jumping from exceedingly elementary and scrappy American and General History Courses in the 1890's to the taking over of what had been college courses and college texts for our four year younger pupils in 1896.

"Feeling that history is as important, as necessary and as beneficial as any subject in the secondary curricula we have insisted on a four year unit for it and slicing the history of the whole world into four parts we have proceeded to shuffle our cards as a method of escaping from the difficulties that beset us. Even the shuffling has not been effective for the four block system of 1896 still holds its place tenaciously, notwithstanding the recommendations of the Committee of 1907.

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*Com. Ed. Report, 1892-3, p. 534.

I. Ancient History to 800 A. D.
II. General Survey to 1760 (England).
III. Modern European History.
IV. American History and Government.

"Before text-books are installed adapted to this report there comes from the East and the West, from High School and University enough of comment and suggestion, of criticism and objection, to make us pause and wonder if this change will bridge the difficulties of the old arrangement.

"A wave of unrest seems to be catching us up on its crest. Not only is there increased emphasis on the demand for Modern History, but the call is imperative for room for the other social sciences.

"Upon investigation I have come to the conclusion that we are more than a generation away from any possible hope of such history work in our grades as the Committee of Eight have outlined.

"Supervisors must have these suggestions forced home upon them, they must grasp them and outline and place them definitely and intelligently before their teachers and we must raise the preparation of the grade and rural teachers to these standards before our high school courses will articulate as they should with the grade work.

"Now when over half the pupils take two years of history or less would it not be well to ask, 'What is essential, in our courses, to efficient living? Is there a part of our history courses that all should have, if so, is that part articulated in the present arrangement so as to be separable from the other courses?'

"It is clear we cannot demand four years of history from our secondary pupils. We may offer it but not demand. Which of the courses we offer are essential to life equipment? What ones will be most useful to the rank and file and what means can we use to induce students to select more courses and what courses with better articulation?

"Pondering over these things I have felt like smashing some of our idols in the articulation of our history courses and I would put the hammer first to the four year unit fetish. Why work toward an absolute four year unit in every line? There are more than four desirable lines in a high school curriculum, nay there are more than four necessary directions of growth for the one who is going on further. If you concede this point, since four is contained in sixteen but four times, we are forced to offer some lines fairly complete, useful and well articulated that consume less than four years.

"My next clip of the hammer would take down this habit of over-weighting the course with Ancient and Mediaeval history. This is the history that confuses and repels the majority of the pupils and with good pedagogical reason, too. These boys and girls who were born but yesterday have no historical perspective and yet through the magic of a printed page, one-half of whose nomenclature is Greek to them, you ask them to bridge the chasm of time and space and race before you have revealed to them the world in which they expect to live and about which they want very much to know.

"We have taken over bodily the idea of the German cycles of history teaching, smeared and smattered it in the grades and not stopped to ask if this wondrous new nation in this wondrous new land needs or can digest quite so much of the detail of Ancient and Mediaeval days as can Germany and France, each so much more filled with survivals of those days in thought, custom, manner and architecture.

"With our two year shorter course too in secondary schools we omit to notice that we are dwarfing and slighting the history of our own country and its place in modern world history as no European country would dare to do.

"I sometimes wonder if this state is interested enough in the teaching of history and government for its own good. Into the hopper of our public schools it allows to be poured the spawn of the whole world and expects us to grind out *only Americans* and yet it concerns not itself with how we set the machinery to do it.

"I would not eliminate Ancient and Mediaeval History; but for ordinary high school purposes I would reduce to the broad generalizations that you wish to survive detailed study and I would motivate it by showing more clearly its bearing on the present and vitalize it so far as possible with the actual living conditions of those days, and I certainly would shorten the time spent upon it.

"And so having broken some idols I proceed to construct a substitute scheme of courses as follows:

Optional	*Advised Courses*	*Correlated*
I.	I.	I. Elementary Science
II.	II. General Survey to 1760	II. English Literature
III. U. S. Pol. and Ec. History	III. American History and Civics	III. American Literature
IV. Ancient History and Art and Architecture.	IV. Modern World History and Economics	IV. English Composition

"I leave the first year vacant in history to give opportunity for a rebuilt and widened combination of physical and commercial geography. If such a course is correlated with history and supplemented by the year of first year English taught to enlarge and strengthen vocabulary and imagination I believe we should obtain in the second year far more capable history students than the present first year parrot-like learning of Ancient history has produced. There would also be a better opportunity for the early introduction of foreign languages and those taking Latin could have that course enriched for them by the necessary facts of Ancient history, taught in a most appropriate place and presumably to students having language and history ability. In the second year I would place a General Survey with Ancient and Mediaeval History taught as indicated before down to about 1066. When taking up England as the center of the theme, one could portray her nationalization, contrast her developing constitutional government sharply with conditions in France and trace her victories in the Titanic struggle of the nations for colonies and commerce and thus arrive at the point of the upbuilding of her first great empire, thereby giving the European backgrounds for our colonial history.

"Correlated with this course would stand most advantageously the course in English Literature. And now I want to erect an idol for myself in this articulation scheme and in this assemblage I fear no desecrating hand upon it. I am looking forward to the day when American History and Government shall be compulsory in every high school in this country and I would place it here in this third year in its direct chronological connection with its source—Europe in the seventeenth and eighteenth centuries.

"By better grade courses and better expansion of European colonization in our General Survey, the colonial period could be much better abridged and time gained for the necessary explanations of the later points of European contact. Here I would want nearly one-half the emphasis of the course to be on civics—taught by the most practical laboratory methods with local and state needs emphasized as much as the Federal framework. When I say half I do not mean a slicing of the two studies apart. If the history is taught by movements accentuating the Tariff, the Bank and Internal Improvements as our first great questions arousing sectionalism and then the triple threaded strand of Westward Expansion, Slavery and States Rights is unravelled, you come naturally to the triumph of the strong government party and its virtues and excesses revealed we arrive finally at our contemperaneous problems of imperalism and the massing of capital. Civics in its turn will be an elucidation and a review of history and by the time they have completed the course they will trace the history of present day problems, tariff, monetary system, expansion and trusts with their chains of dates as easily as they memorized scattered facts in the past and with far greater benefit.

"In developing our government some attention should be given to a comparison of it with other governments, particularly with that of England showing so far as possible to minds of this age how these two starting with the same view-point, diverge and yet how by the very fact of our common bonds of law and governmental ideals more than by speech even, the Anglo-Saxon tie holds strong.

"Correlated with this course would stand American Literature taught after English and showing the change environment can cause. Because I have erected the idol of a compulsory course in American History and Government there should here be provided an alternative course for those who can elect but one year of history and perhaps that will be an increasing number as you introduce and accredit vocational subjects. This alternative should be an economic and political history of the United States, arranged to suit the elector's needs.

"In the fourth year I have placed Modern World History and Economics, approached after the study of our own history and government that they may be less provincial in their evaluation of America and Americans. In this course you would eventually arrive again at comparisons of governmental conditions and problems. I would have this course taught if possible with an abundance of illustration, periodicals and newspapers, travellers' guides and books of travel. The room should be one big work shop at times where teacher and pupils delve together for the key to the matters of present day interest. This would develop also incidentally their taste for reading things worth while.

"Standing at our complex meeting of the ways I would use current events strongly here as a means of history teaching—following the strands of destiny—conspicuous at the moment back into the time-eroded ground of its causative past.

"That idol that Modern History only extends to 1815 in Europe and 1870 in the United States should go down. Once I might have feared to stand here and say that recent events in history were safe things to try to teach, but now I have the greatest men on some of our greatest faculties to quote and so I too dare ask for light from the immediate past for those to whom we are about to entrust the immediate future. They will need it in their business.

"I may violate all the principles of good discipline and shock irretrievably the Universal Peace Propagandist, but I love my boys best when they start to take off their coats in discussions on Mexico and Japan. When one has quaffed deeply at the cup of life or its joys have turned to ashes on yearning lips then research allures and science soothes, but all that youth asks of you is to let him read out of the past the puzzle of the present, the riddle of the future, nor is he patient enough nor gifted enough to get his desired message from the mosaic like designs you have been giving to him. With the hand of an artist you must reveal to him the vistas of the past. He is only ready step by step for the science of how the colors are mixed, but when once you have shown him how the atmosphere of the picture is the peculiar viewpoint of an age, how the mountain peaks of the distance are the highest points of human achievement and how in the foreground of every picture are figures he may study in detail that moved and thought and had their being even as he does, then grasping at the portentious, potent vitality of the spectacle he too will fall to wondering on the meaning of humanity but not yet—not until the period of psychological readjustment comes to him—and we high school teachers don't quite get that—we accumulate for it.

"The last idol I would attack is the old idea that the teaching of elementary economics should not be attemped in the secondary schools. I have ventured to suggest it for the last half of the senior year. Correlated with this fourth year is Senior English, obtaining its themes from history and economic work to some extent and so conserving the energy of the child. Under optional courses here I have placed Ancient History enriched with an alternating study of Art and Architecture for those who desire four years of history. Here this is approached with a more mature mind and a widened perception.

"In a constitutional state the people must be properly educated in order that they may exercise the powers of sovereignty conferred upon them. America has at her disposal the genius of divers races but unless she elects to clarify and amalgamate them in the melting pot of a wise national education their very diversity will be her destruction.

"Indeed, we need not only to teach these future generations whence this nation came, but whither it is possibly going.

"I know of no country where it is more imperative to teach the elements of economics to the masses. I know the committee of Ten recommended, 'no formal instruction in political economy, but that the general principles be taught, particularly with United States History, Civil Government and Commercial Geography'. But conditions have changed. Practically every hard problem of our republic is bound up in economic principles. These problems are expected to be solved by the voice of the people. Where are they receiving the education that teaches the answers?

"Our public schools are our safe-guard against a threatened disruption of our society. Like a faint far cry in the wilderness comes the increased class distrust, the prejudice against prosperity, the muck-raking of official life. In depression and suffering false prophets lead our people. But a short time ago the panacea of cheap money blinded half our voters and today it is a question if the governments legal assault on combined capital is not violating the very principles of economic development.

"That our voters have an elementary knowledge of the laws of production, consumpition and distribution of wealth, of the organization of industry, the nature of corporations, public, private and quasi, the nature of money and of value and of the problems of revenue and taxation has become imperative for the preservation and cleansing of our democracy. The voter himself needs this knowledge too for his own protection. Have you not seen the widow and the orphan, the minister, the farmer and the school master forever in the trail of the 'blue-sky' shark.

"The articulation of our history, civics and economic courses with each other, with grade-work, with the pupil's comprehension and with life all need consideration. Properly balanced and properly taught they will create for the community, the eye that is keen, the head that is clear, the hand that is ready, the heart that is right."

Discussion on the topic was led by Sarah Whittenberg, of Murphysboro Township High School, who spoke as follows:

"The teaching of history and government should aim to prepare the pupil for service to the society and the commonwealth in which he lives. To be most efficient as a member of society and most useful as a citizen, he must understand our social and political institutions. To understand these, he must know something of their beginnings and of their growth, and see that they are the products of a multitude of agencies that have been at work through a long period of time. He should be able to trace their development in the gradual progress of the race. He should learn that different conditions and different racial tendencies and characteristics have naturally produced widely different social customs, ideals, religious beliefs, and forms of government. In this way his sympathies become broadened, his outlook upon life enlarged, and his mind trained to look for causes, to weigh evidences, and to arrive at safe conclusions. How shall our courses in history and government be articulated so as best to secure this result, and thus best prepare the pupils to live in the present?

"In my judgment, Ancient History should be placed in the first year as an elective course, the pupils taking Latin being permitted to elect it the second year. The objection that this period is too remote in time and too far removed in circumstance and in geographical environment for its study to be profitably undertaken by ninth and tenth grade students seems on slight consideration to be plausible. I am not sure, however, that to study the life, achievements, and political institutions of the Greeks and Romans before following the movements of the Middle Ages or studying the complex institutions of our own time, is psychologically wrong. The average ninth grade pupil knows almost nothing about the institutions of the present, and surely there is much in Mediaeval History for which he needs to be prepared by a knowledge of the ancient world. The life of the ancients was far more simple than ours. In a certain sense they were children. Their religious beliefs their explanation of the physical forces which they saw playing about them, and their admiration for physical dexterity and courage appeal strongly to the interests and imagination of youth.

"True, the teacher must make the subject truly alive; she must prepare the pupils for the text-book assignment; she must supplement its details with much that she has gleaned from her wider reading, and must select wisely the outside readings. By sympathetic portrayal she must make the actors really live again in the imagination of the pupils. When this is done, I have yet to find a ninth grade class which does not become keenly interested in the beliefs, customs, and achievements of the ancient nations. Sufficient attention should be given to the Egyptians, Hebrews, Phoenicians, and Babylonians to enable the pupils to see and appreciate the contributions made by each to civilization, but by far the greater part of the year should be given to Greek and Roman history. The former will present but few difficulties, for the story is one of absorbing interest and worthy to be the possession of every high school student. Emphasis should be placed on the geography of the Mediterranean region; Greek mythology, life, customs, art, and religion should be sympathetically treated; the spread of Greek civilization through the conquests of Alexander and the influence of Greek culture upon Rome should be noted. Roman history presents greater difficulties and requires a judicious selection of material, that interest may be sustained and Rome's contributions to civilization comprehended. Much that the usual text book contains about the early history is uncertain, and should be passed over hastily that time may be saved for what is more important. The development of the Roman constitution, the expansion of the territory and the power of Rome, the extension of Roman citizenship, the administration of the provinces, and the development of the Roman law should be stressed.

"For the course in Mediaeval and Modern history recommended by the Committee of Seven for the tenth grade, I believe there should be substituted a course in European history ending about 1763. The study of English history should not be separated from that of continental history. Many pupils take English history who did not elect Mediaeval and Modern history the preceding year. To cover the entire period of English history in the eleventh grade and do enough reading on continental history to make English and Continental relations intelligible, makes too much work for one year. Undue emphasis is placed on English history by treating it as a part of European history in the tenth grade and as a separate course in the eleventh grade. This 'survey' should center around England and France. While there must be included enough of General European history to make possible a comprehension of the important movements and institutions of the period there must be much of detail somewhere that facts may seem alive. To follow with some wealth of detail the development of the one or two nations which have influenced world history most strongly, and then to touch the rest at just the right places and with sufficient detail to lend vividness is better than to attempt to cover the whole field with the condensed treatment which the extent of the field would make necessary. If we would vitalize the periods for the pupils, we must get close to the actors themselves. English history is better understood and more economically taught when studied in connection with the chief events of European history. Likewise, there is an advantage in teaching American discovery, exploration, and colonization as a part of European history. The circumstances which led to the discovery of America, the conditions which gave to a limited number of European nations the advantage in the establishment of colonies, the characteristics of the colonial systems of these nations, which influenced greatly the subsequent development of their colonies, and the close connection between events in Europe and in the colonies during the colonial period will be much better understood when our colonial period is taught as a part of European history.

"I am not sure that 'American History and Civics' should be placed in the eleventh grade and 'Modern World History and Economics' in the twelfth grade. The order recommended by the Committee of Five seems to me preferable. Just as the colonial policy of the mother country needs to be viewed by the American student in its European setting, so very much of our national history should be studied by the high school student after a considerable knowledge of European history during the period has been obtained. The causes and the outcome of the American Revolution and the foreign complications of the first thirty years will look very different to the student who knows the facts from the English and

French as well as from the American side. Finally, since we are Americans and are seeking to prepare our high school students for the duties of American citizenship, and since a majority of them do not go to college, it seems fitting that the twelfth grade work in history and government should be given to our own political institutions and industrial policies, and that this study should be made after the pupil has acquired some knowledge of the institutions and policies of the other leading countries of the world. He will thus interpret our history more fairly, be saved from the provincialism which the narrow view engenders, judge of the excellence or lack of excellence of our institutions and policies more accurately because of his wider information, and will have reserved the best year of his high school work for the study of those conditions which he, as a citizen, will assist in making better or worse."

Discussion continued by U. S. Parker.

"We can and ought to have both Civics and Economics in our high schools. The subjects are not too difficult as is often argued.

The Modernization of American History and Civics.

"What is meant by the question? Our courses are to be so shaped as to give our pupils a knowledge of our social and industrial problems in their proper relationships. To help them to see the struggle of Modern Democracy with Boss rule. Pupils should see the problems of city government. What new plans are suggested and why. Pupils should also understand the problems of our present Congress—just what the Currency Bill is to help and how. Another group of problems our pupils should understand is our slum problems which concerns so vitally both our cities and the country.

"Conservation problems must also be understood. Modernization does not mean merely the study of modern problems, for they must know the broad development of American history and not only the roots of modern problems. If historical judgment is to be developed it is best done by cycles of problems which are complete. Cautious judgment can best be developed by study of past problems completed. They can see the liability of human judgment to err. It must also be a background of our literature and give us a knowledge of our great men.

"Should we make a further effort to modernize? We wish to prepare them for life work, for 80 per cent never have another opportunity to make a systematic study of our problems which they must help to decide after leaving school. This line also follows the line of interest. All normal children are more interested in our problems than much of the material of texts. One can also get more intellectual culture out of modern work.

"If we adopt Report of Committee of 1905 then the majority of pupils would not have Mediaeval and Modern History. We should:

"I. Strive to emphasize work since 1865 as roots of most of our problems lie there. This means to

(1) Eliminate some problems to get more time.

(2) Pass over more lightly topics with slight connection with problems.

(3) When dealing with a modern problem trace it to its roots. See that our Governor's weakness of power grew out of colonial struggle of legislatures and governor.

Our Civics may also be cut in places where too many non-essentials exist in texts.

"II. Emphasize discussions of modern problems in magazines by special reports from individual pupils.

(1) "Short 5 minute reports and longer semester reports should be given. The pupils are given some references and required to find others. Articles are outlined, a constructive outline is framed by the pupil which is criticized. Then a pupil is required to discuss for 10 minutes from a brief skeleton the problem. Then the chief points are placed in note-books. Debates also aid in this.

(2) Collateral readings should emphasize modern problems.

(3) Each student should take a little school paper and it should be discussed about 20 minutes per week.

All of these things add interest which makes our work not only interesting but profitable."

General Discussion.

Professor Larson believes that the difficulty in teaching is that so many teachers are forced to follow texts and they are made by college men and not by men who know what the high school student can comprehend. Too much time is given to Ancient History. It should not be completely eliminated, but there is so much which should not be there and so much that is not history. Stop at 400 A. D. if one wishes, but spend not more than one semester. The second semester should take down to about 1100 where modern history really begins.

Sarah Whittenberg felt that Ancient History is dry because there is no vital interest and unless we touch points with sufficient detail they are forgotten. Our texts are too often summaries.

U. S. Parker asked: "What decides the selection we make of the material we teach? Too many select with the thought in mind to fit them for some examination and teachers might be aided in this who have no other guide. We must also watch that each block of history must be a unit as our history courses are not compulsory.

Demand for reorganization comes from the economic and social side. Are their divisions the same as the old political and general divisions of history?

Professor Frederic Duncalf, of the University of Illinois, read the Report of a Conference Committee on a High School Exhibit, which was substantially as follows:

Report of the Committee on Illustrative Material.

Procedure of Committee.

The first task of the Committee was to consult the sentiment of all the History Teachers of the State as to the advisability of establishing a permanent exhibit of illustrative materials. To this effect a postcard questionnaire was directed to the teachers of History in the secondary schools of the State. When enough replies had been received to warrant the further efforts of the Committee, a second questionnaire was drafted and sent out to inquire into the conditions prevailing in the State at the present time, which might bear upon the problem.

This questionnaire was sent only to those schools, teachers of which had replied to the first questionnaire. These replies furnished the basis on which this report is compiled. The expense of this correspondence was shared by the Departments of the Visitor of Schools, History and Political Science of the University.

Character of Replies.

Number of teachers to whom first questionnaire was sent	594
Number of teachers from whom replies were received	225
Number of schools to which second questionnaire was sent	186
Number of schools from which replies were received	109

The total number of schools to which questionnaire was sent was 409, which includes practically all the High Schools listed in the State Superintendent's Directory of Schools, irrespective of whether they were doing full High School work or not. In the replies to the first questionnaire forty per cent of the schools were represented. About sixty per cent of these replied to the second questionnaire, or a little more than one-fourth of the Schools of the State. These replies are grouped according to the population of the communities represented as follows:

Over 100,000	8
40—70,000	5
20—40,000	8
10—20,000	5
5—10,000	11
3—5,000	17
2,000 or less	55

This grouping is an arbitrary one with no further significance than the convenience of the secretary in tabulating the schools, but it serves to show that High Schools of all kinds are fairly represented. Even though the statistics do not describe the conditions of all the High Schools of the State, the Committee feels justified in assuming that the statistics, which they have received, convey a fairly accurate impression of conditions prevailing throughout the State, and this assumption is followed consistently in the body of the Report. The list of the Schools from which replies were received is appended as is also a map showing their location in the State.

Recommendations.

The following recommendations are based upon a study of the replies and are discussed at length in the following pages:

I. A permanent collection of illustrative material which shall be available at all times for inspection by teachers should be established at some central location, preferably the University. This collection should include a library on social science pedagogy, model reference and text book library, slides, museum materials, and a complete classified collection of catalogs. For civics instruction there should be sample ballots, types of municipal, state, and United States documents, tax schedules, and other similar materials, together with full information as to where and how such materials may be obtained.

II. A standing advisory committee should be appointed to look after the collection and maintenance of this material

In addition to this the committee also recommends that the Association urge the following:

1. THAT every High School have accessible either in a school or public library an agreed minimum of reference books.

II. THAT every High School have at least physical maps of Europe and North America and political maps of the five continents.

III. THAT each High School Administration be urged to assign the social science work to one teacher exclusively in schools where its teaching demands the equivalent of one teacher's time.

IV. THAT each High School Administration also be urged to assign the social science work to one room exclusively where as many hours as are in a day are devoted to the teaching of social science.

Discussion of Recommendations.

A Permanent Collection. No discussion is necessary as to the question of a permanent exhibit, for practically all of the teachers in their replies to the first questionnaire, and in suggestions added to the second, subscribed to this idea. Many of them were also in favor of an auxiliary movable collection. Both desires can be satisfied by making parts of the permanent collection subject to loan call.

Reference Library.

The library situation in the State affords some room for congratulation, for in the first four classes all of the schools have access to public libraries. In cities ranging from three to ten thousand in population over seventy-five per cent have such advantages, and only in the last class are any considerable per cent without public libraries. Only about forty per cent of the latter report access to such institutions.

In reference to High School libraries, the conditions are quite as gratifying. Only one school in the first four classes reports no High School library. In the next two classes over seventy-five per cent of the schools have libraries in their buildings and only eighteen schools in the last class report none.

Model Library.

No effort was made in the questionnaire to determine either the number or the character of the books in these libraries and possibly such statistics might tend to temper our gratification. The existence of the libraries at all however, offers abundant hope, and to assist in selection, numerous recognized authorities have published lists of books desirable for High School Libraries, which by judicious co-operation with library authorities can be used to provide a satisfactory equipment. However, it might be well for the teachers of this State to draw up a minimum list of books with which every High School should be provided. A collection of these books could be kept to be loaned to needy schools, but perhaps our efforts ought to be directed most earnestly toward enabling those communities to provide themselves with the necessary books. In this matter, as in the case of maps, statistics show that there is no real economic justification for the lack of them. It may not be absolutely necessary for a community to have both a school library and a public library, but it does seem essential that it should have one or the other containing a minimum number of satisfactory books.

Library of Social Science Pedagogy.

Another side of the library problem, which was not investigated, but which ought to be considered, is the library on methods of teaching and studying in the Social Sciences. This is of especial concern to the teachers. Altho most of them probably have some of the standard works on the subject and subscribe for the HISTORY TEACHERS MAGAZINE, there ought to be somewhere in the State a rather thorough collection of books on these subjects, which could be loaned to the teachers from time to time.

Wall Maps.

The use of wall maps in connection with the teaching of the Social Sciences is too old and well established to require any discussion of their importance here. The fact that only nineteen of the replies report no wall maps of any kind whatever, and that all of these replies are from the last two classes of schools, shows that their value is fairly recognized in this State. The examination of the statistics in detail, however, brings out that only thirty-one per cent of the schools have any physical wall maps while more than seventy per cent are equipped with some wall historical maps. The general prevalence of the use of wall maps in all classes of communities seems to show that there are a great number of such maps on the market. Inasmuch as length of service, clearness of detail, and local conditions must enter as considerations, it would be distinctly valuable, not only to have the various catalogs available, but also at some central place to have examples of various kinds of maps.

Outline Maps.

The use of outline maps for the students to fill out, whether within or after class hours, is quite as important as the use of wall maps. Only fourteen of the schools report no use of outline maps, while almost ninety per cent of the schools use them in one form or another. Apparently over thirty per cent of the schools use the separate maps exclusively, while about twenty per cent use outline map books of one kind or another. Over thirty per cent use both for different classes of students. In the selection of outline maps there is less occasion for very close personal examination, the differences consisting mainly in the size of the maps and in the periods which they illustrate,—information which can be gleaned almost as well from the catalogs as from individual examination. Nevertheless, it might be well to have on hand samples of the various kinds of maps and certainly of the map books.

Charts.

The replies in regard to the use of charts brought out very clearly the fact that as yet no particular charts have become recognized as standard necessities in the teaching of the Social Sciences. However, over thirty per cent of the schools reported the use of charts of one kind or another, many of which were of the home-made variety. Certain charts, especially in the fields of Industrial History, Civics and American History, are coming more and more into demand. It may therefore, be well to gather together examples of these various kinds of charts and keep them on exhibition where they may act as a source either of inspiration or of warning.

Pictures of Various Kinds.

The value of pictures as aids in the teaching of the Social Sciences has become so well recognized that a text book printed without pictorial illustrations would receive very little encouragement on the school book market today. Of recent years many teachers have found it advisable to supplement the pictures in the text book, a condition which is exemplified by the fact that more than sixty per cent of the teachers use pictures of one kind or another. Some wall pictures are used in every field of the Social Sciences, though not in great numbers. Photographs are also used, some schools being supplied with hundreds, although in general only about twenty per cent of the teachers employ them to any great extent. Stereographs are found in small favor, only three schools reporting the use of them. Post Cards, used directly, or in connection with the reflectoscope, are employed as extensively as photographs and in greater numbers. Other pictures, ranging from art reproductions to pictorial representations of the development of civilization, along with fac-similes of manuscripts, obtain favor with a great many teachers. It would, of course, be futile to attempt to gather into one place all the pictures which could be used in connection with the teaching of the Social Sciences. It would be quite as impracticable even to attempt to duplicate what pictures are already being used in the schools of Illinois. On the other hand, much real service could be rendered by a collection of examples of the various kinds of pictures. By careful selection a series of pictures might be arranged in effective groups to illustrate movements, or to serve as descriptions of various phases of civilization. Even this would require considerable expenditure and very definite attention from some one.

Lanterns.

About thirty-four per cent of the schools are provided with projectoscopes, and twenty-four per cent with reflectoscopes, detailed as follows:

Class	Projectoscopes	Reflectoscopes	Using lanterns for History Purposes.
1st	87 per cent	50 per cent	87 per cent
2nd	80 per cent	80 per cent	100 per cent
3rd	87 per cent	62 per cent	45 per cent
4th	80 per cent	80 per cent	25 per cent
5th	37 per cent	18 per cent	25 per cent
6th	37 per cent	7 per cent	50 per cent
7th	9 per cent	6 per cent	40 per cent

Thus 50 per cent of the Schools that have lanterns are using them in connection with history teaching. It will scarcely be necessary to go back to the conditions of several years ago to discover in the above figures a very definite tendency toward the acquisition of lanterns, and even in the schools which are already so provided, where the lanterns are being used primarily for scientific work, they are rapidly coming into use for purposes of history instruction, as the above figures show.

While these figures are by no means absolutely accurate, yet with due consideration of possible omissions in the answers to the questionnaire, it is safe to conclude that the use of the lantern has ceased to be a fad, and is coming to be a very real aid to the history teacher. This becomes even more strikingly apparent when it is noted that in the first four classes, representing those cities with a population of over 10,000, about eighty-five per cent of the Schools are provided with lanterns, and seventy-five per cent are using them in History teaching. In the next two classes, representing communities which have a population of to 10,000 thirty-seven per cent have lanterns, half of which are using them for a like purpose. Even in the smaller communities, lanterns are being provided and are being used in History work.

In regard to the lanterns themselves, probably the best that we can do is to keep on hand a list of catalogs and to gather from the physicists opinions as to the efficiency of the various kinds.

Slides.

Under these circumstances it becomes a matter of wisdom to consider the problem of slides. Great economy might result from co-operation in selecting the best slides for the various phases of the Social Science studies, and in maintaining a central collection for loan circulation. Such work is already being done for schools in New England by Harvard University, while in New York the University of the State of New York maintains a large number of slides as a loan collection. Such work here would help the smaller communities certainly, and might even be of assistance to larger communities, which could afford local collections of considerable size.

Museum Materials.

In this State, as elsewhere, museums have been called into use by teachers of history, though by no means to the extent to which pictures have been employed. For example, only six schools in the first three classes report the use of models, and none whatever in the remaining classes. Casts are used by some schools in all classes, and the same is true of relics. No more than fifteen per cent of the total number of schools, however, make use of either. Here, as in the case of the pictures, a central collection of suggestive value might be made.

Catalogs.

Hopeless as it is to attempt to obtain a complete series of illustrative materials, it is still quite possible to collect catalogs of nearly all the different kinds of such materials. A collection of this kind should be made and kept in classified form to be subject in whole or in part to the temporary needs of any teacher. It would thus constitute one of the most important of the movable features of the exhibit, for, even if the teacher would not thereby be enabled to compare fully, he would be able to compare descriptions and prices.

Materials for Instruction in Civics.

No specific inquiries were made in the questionnaire regarding the use of illustrative materials in the teaching of civics. In this field there is no reason for the failure to use such materials, for the documents showing the work of our avrious grades of government can be obtained free of charge. Every teacher can obtain for the asking the Illinois Blue Book, copies of the state constitution, reports of state officers, boards, and commissions, copies of many of the most important laws, and maps showing the congressional and senatorial apportionments; and a letter to a member of Congress will obtain national materials of a somewhat similar character. Perhaps the most important illustrative material is that relating to the activities of the community in which the school is located: local maps, reports of county and city officers, whether printed separately or in newspapers, city ordinances, tax schedules, sample ballots, etc.; material of this sort can be had for the asking. The thing most needed is a carefully planned exhibit of all classes of material with a statement as to where such material can be procured. The object here would be to stimulate interest in the use of illustrative material which is already easily available.

Standing Committee.

With the possibility that but comparatively small funds will be availalbe to build up a permanent collection at the University, or elsewhere, the practical problem of making the expenditure meet the most pressing needs of the teachers must be considered. Likewise, the arrangement of the exhibit and provision for lending parts of the collection in such a way as to benefit the greater number of communities, will create constant problems, which the teachers in various parts of the state will best be able to decide. For these reasons it has been recommended that a Standing Committee be appointed to advise in regard to such problems.

Other Recommendations.

A study of the replies to the second questionnaire revealed certain needs which deserve immediate attention. These are matters, which, it is believed, can be improved by a definite and concerted stand on the part of the teachers acting as a body. For that reason special attention has been called to these needs.

Minimum Library.

This problem has already been discused in connection with the exhibit.

Minimum Maps.

This question has also been discussed in connection with the exhibit.

Teacher and Subject.

Even such a cursory survey of the problem of illustrative materials as this discussion has been, emphasizes the fact that the teaching of Social Sciences has become a distinct science or art—certainly, a business in itself that demands the whole attention of the teacher. The general popularity of the Social Sciences, the fact that almost every curriculum in the secondary school program calls for one or more of the social science studies, places them along with Mathematics and English as fundamental subjects. Of all the schools reached by this questionnaire, only in the last class were there any schools which offered less than four Social Science subjects, while only six schools of the whole 109 offered less than three and these cases were due to unusual and temporary conditions. Thus even in the smaller schools enough work is offered to engage the whole time of one teacher and in large schools, in some of which as many as six different branches of the Social Sciences are offered, there is work enough to occupy the entire time of two or more teachers. An important step in increasing the efficiency of Social Science work could thus be effected if the secondary school administration would make such provision. It would be wise to recommend to the administrative authorities that where as many hours of work are offered in the Social Sciences as are usually allotted to one teacher, that all the Social Science work be entrusted to one teacher, and that where as many hours are offered as would engage the time of two teachers, that American History, Civics, and Industrial History be assigned to one teacher, the other history courses to another.

Teacher and Room.

In the same way, as practically all the teachers agree, it would be desirable to have rooms devoted exclusively to the Social Sciences. The use of several rooms in a school makes the attainment of the best results with illustrative materials, if not impossible, certainly very difficult. As a rule a school cannot afford to duplicate sets of maps, to say nothing of other illustrative materials, and if such maps have to be carried about constantly, or their use deferred past the psychological moment because another class is using them, or is using the room in which they are kept, both teacher and students become discouraged. On the other hand, the advantage of having a room where illustrative materials can be permanently located usually encourages further development of the use of these materials, and thus increases the efficiency of the work. On this point the opinions of teachers of the State is practically unanimous, and about twenty-eight of the schools in Illinois have at least one room set aside for the use of Social Sciences. Several have two and one has as many as four. This condition is not confined to the larger schools. While it is perhaps too much to hope that all the classes in the Social Sciences can be taught in rooms exclusively devoted to that purpose, yet the fact that in nineteen schools such work is scattered between three rooms shared with other subjects, in two schools between four, and in one school even between five, leads to the conclusion that there is considerable room for improvement. Certainly the strong desirability of devoting rooms exclusively to the Social Sciences ought to be brought directly to the attention of the administrators, and some consequent care in the arrangement of the schools ought to improve the existing conditions.

Use of the Exhibit.

Present Equipment of Schools.

The committee foud especially valuable the notes and suggestions which were appended to the replies by many teachers. These not only served to complete the description of present conditions as revealed by statistics, but yielded as well that highly intangible, but decidedly important information as to the spirit and attitude of the communities toward Social Science work. In one school the teacher was already employing a moving picture machine, in others optimistic prospects were mentioned, while yet others bemoaned the fact that the intellectual horizon of the local school board extended no further than the need of text books and maps. Some schools reported access to well equipped museums and had in addition illustrative equipment of every kind; others were struggling along with nothing more than a few picture postcards. Only a few schools were without illustrative material of some kind. Judging from the replies the teachers, at any rate, realize the value of such aids, however poor may be their equipment at the present time, and however unsympathetic the local school board.

Finances:

Altho an enumeration of the various materials, which a teacher of the Social Sciences might use, would make them appear as the greatest potential enemy of the school fund exchequer, the actual statistics of the funds provided for this year affords no cause for alarm on that score. Although thirty-three of the replies stated that the local boards were as liberal in their treatment of the Social Sciences as they were of the Natural Sciences, only three of such schools received any advantages thereby; in the other cases the equality was the pathetic one of no provision at all. Seventy-six teachers replied that the Social Sciences were not accorded equal treatment. Of the schools which did receive funds this year, nine received less than five dollars; eight received from five to ten dollars; five, from ten to twenty dollars; eight, from twenty to thirty dollars; two, thirty dollars; eight, fifty dollars; two, seventy-five dollars; one, ninety dollars, and four schools over a hundred dollars. Five did not specify the exact amount, and fifty-seven received nothing at all. No doubt the failure of many schools to receive any appropriation for the Social Sciences this year is to be explained by an unusual appropriation in the past, or, as was stated in some cases, by the prospect of more generous treatment in the immediate future. Again, it should not be overlooked that the nature of the Social Sciences studies enables them to profit by the more liberal allowance for other subjects. The lantern purchased for the physics department can also be used by the Social Science teacher, and the models made for the Latin department serve the teacher of Ancient History just as well; even the lives of scientists which enrich the botany and chemistry library offer valuable material to the wide awake teacher of history. So the conditions are by no means so poor as they might seem at first glance, while the most striking thing about the statistics of the actual amounts received this year is that the appropriations were in no sense limited to the larger towns, either in the proportion of schools which received more money or in the amounts accorded them. Schools in towns of less than two thousand inhabitants received as much as fifty and seventy-five dollars, and altho some of these appropriations were due to unusual conditions, the conclusion seems irresistible that none of these communities are so poor that they cannot make some appropriation if they are willing.

Immediate Needs.

Even if the Social Sciences were accorded as liberal treatment as reason could expect, no teacher could undertake to provide a complete and elaborate collection of illustrative materials, were such desirable. The danger of excessive and aimless use of illustrations is at least as great as the loss occasioned by the lack of them—a contingency which cannot be overemphasized. Judicious selection of relatively little material suited to the inclination and training of the teacher is perhaps even more valuable for efficient work than a great supply of materials. This point was emphasized by the teachers in their suggestions. Many suggested that their needs could best be met by a good, well selected, permanent exhibit at the University, where they could visit it at any time of the year and make selections for their own schools. Other suggestions were that cabinets of illustrative materials be arranged for the various branches of the Social Sciences and these circulated among the schools. Other teachers thought that a central collection of lantern slides for loan purposes would satisfy their immediate needs, while some of the already well equipped schools urged that relics and reproductions of costumes, weapons, and utensils, as well as models of houses, should be procured.

Possible Service of Collection:

The greatest service which a collection, either fixed or circulating, or both, could render, would be to small schools with limited funds. It should afford them a place where they can most carefully examine the various kinds of materials, like maps and pictures, and select from them those which will have the most permanent and economic value. The already large and varied needs of the University makes possible the maintenance of a fairly complete collection without any great additional appropriation for this specific purpose. Since it is quite posible for the various departments of the University to place their illustrative materials, not in use, at some common center, and since materials in constant use can be duplicated at small cost, an effective collection could thus be maintained. Likewise, the splendid equipment of the University with museums and pictorial materials affords a collection of illustrative matter from which the teachers with larger available funds will be able to derive inspiration and suggestions for their expenditures. By carefully listing all the materials in the collections, and making this available in published form to all the teachers of the State, the service of the exhibit could be extended, even when the teachers are unable to visit it in person. In this manner a permanent collection could be made doubly valuable to all schools in the State, both in avoiding wasteful expenditure of funds, and in procuring most effective materials.

Respectfully submitted,

A. C. Krey, Secretary.

Afternoon Session called to order by A. H. Lybyer.

Report of a Committee of the Mississippi Valley Historical Association on the Certification of Teachers of History and Government, by Supt. S. H. Littler, Toluca:

"It is now more than fifteen years since the American Historical Association aroused by the disorder and aimlessness everywhere prevailing in the teaching of history in American schools, created a committee of seven to study that disorder and to try to find a way out of it. After carefully investigating existing conditions, this committee in 1898 recommended a 4 year course for high school with unit courses in Ancient, Mediaeval and Modern, English, and American history. This course proved such a logical advance that it was largely adopted by high schools throughout the country. Since 1898 the historical curriculum has been standardized. Most of the leading publishers have brought out sets of text books to meet the needs of the four units and the New England History Teachers' Association has prepared an elaborate syllabus of the four periods with abundant outlines, directions, and references.

"After a few years of general use the new scheme revealed weakness in two directions. The Ancient history unit proved specially vexatious in use, and the relation of American history to civics aroused diverging opinions. To meet these criticisms, and to bring its recommendations into harmony with the needs of a usage now happily improving, the American Historical Association appointed in 1907 a new committee of five which reported in 1910.

"Modifications in the units and methods of treatment were suggested and a new unit created by the progress of a decade was pointed out. 'The schools are taking history more seriously than they did ten years ago,' declared the committee. 'The great need now is suitable teachers. The schools have a right to demand teachers that are prepared to teach history and have the ability and the spirit to teach it right. Public schools that are content with the old idea that anybody can teach history, that anybody can trace the line of life through the past and give his pupils the spark of interest and the fire of useful knowledge have, in our opinion a distorted conception of their responsibility.' This new problem *of the teacher,* ignored in 1898 when history teaching was an accident and not a profession so impressed the American Historical Association that in 1911 it organized a new committee to consider the *training of teachers.* In the spring of 1911 the various sectional associations, in touch with large bodies of actual teachers volunteered to aid the American Historical Association in this work. Among these was the Mississippi Valley Historical Association which appointed at its Evanston meeting in 1911, a committee on the certification of high school teachers. This committee, representative of the Mississippi Valley, was made up of sixteen of the professors of the leading colleges and universities of the middle states.

"This committee after diligently investigating its problem for two years submitted a report which the members unanimously believe offers a workable solution of the problem of training of high school teachers of history. With educational institutions and practices as divergent as they now are, this is as much as the committee can hope for in 1913. There are three classes of teachers at work in high schools, those who have not completed a four year college course, those who have completed a four year course, and those who have done some graduate work. The committee decided to confine its attention to the second class, feeling that the Mississippi Valley Association ought not to countenance the appointment in high schools of persons who have not completed a standard college course, and believing that the time has not yet come for the requirement of graduate work as a preliminary.

"The committee soon realized that the training of college students to become high school teachers of history involves not only matters of history and pedagogy but also of collegiate organization. The respectable American college ranges in practice from the small college conducted by one man departments with a rigid required course, through all variations of group electives, departmental 'majors,' and special courses until it ends in the complete *laissez faire* of unmitigated free elections.

"If all teachers must have had a college course, what constitutes a satisfactory college course? The committee pointed out the folowing considerations as fundamental in the training of high school teachers.

1. The training should be directed by a college of liberal arts, and it should be kept before the student always that mastery of his subject is the prime necessity for teachers.
2. The specific training should be concentrated in the later years with no freshman or sophomore prerequisites, but those which may be justified on the ground of liberal education without reference to any special vocational work.
3. The college of liberal arts ought to recognize freely the fact that success is easier for the teacher if in addition to his subject matter he has mastered sympathetically a considerable amount of work in psychology, history and theory of education, and school administration, and that a suitable requirement in these subjects should be made for all who wish to teach.

"In addition to the above the student who expects to teach history should specialize enough to understand the scope of his subject, to know something of its methods and materials and to be able to read independently and intelligently along the lines of his teaching. He cannot reach this condition in fewer than 25 or 30 points and may complete 40 out of 120 required for a degree. No undergraduate study can justify a demand for more. In addition to these 25 to 40 points the candidate should do some work in political economy, political science, and sociology. Psychology and pedagogy are usually regulated by university requirement or state law and apply for all teachers. After meeting these, the 25 to 40 points in history and a reasonable amount in related subjects, the candidate will still have left enough of his 120 points to enable him to procure a liberal education.

"The points allotted to historical subjects must be distributed among courses of various types so arranged as to give the proper training to the average student. There will necessarily be (1) one or more introductory courses, (2) advanced courses devoted to limited fields, (3) a teachers course, (4) a possible introductory seminary course.

"It is proper for prospective history teachers like other freshmen to begin their history with a survey of some European field—Ancient, Mediaeval, Modern, or English, followed by a general course in American history the second year. These two courses covering some twelve points should constitute the preliminary training of all students. There should be no specialization before the junior year. Some members of the committee think that survey courses should be taken in all four of the high school units as the candidate may be called upon to teach all of them; but the majority think that usually only two, and never more than three survey courses should be taken. Four such courses would use up twenty-four out of a possible twenty-five to forty points devoted to history and leave little time for that special work without which few teachers can hope to acquire professional expertness; for only this intimate study of limited periods will give a clear understanding of historical forces. Every teacher should know at least one period exhaustively that he may have an insight into all periods which he may later teach. Further, it is the advanced courses which result in small classes, thus giving the student intimate association with his instructor. In the smaller colleges the fields selected should be in those of the instructor's own specialization, but in the larger universities a wider range of selection is possible. A survey course properly handled in one field will be a suitable foundation for an advanced course in another field.

"The course in *teaching of history* which has already appeared in many colleges, ought to be an integral part of every candidate's preparation. It is not to be a course in historical method, but in teaching method; neither is its primary purpose to increase the student's knowledge of history. Its purpose is to professionalize the prospective teacher while he is yet a student—to lead him to consider the field that he studies as a part of his teachable stock in trade. It is designed to acquaint him with such methods of handling text-books and other materials, classes, and distribution of time, as can be learned by rule or observation. A practice course under supervision accomplishes this in the best way. The instructor of this course ought to have in his own experience a definite knowledge of the needs and limitations of the high school. Here is where the college graduate so often fails. His aim ought to be to shorten the period of adjustment which every beginner, however well-informed must pass through before he can become an accomplished teacher. The course must be given as history by a historian. Several universities now give such a course, among them the University of Illinois.

"The proseminary course, a step between the advanced and the research seminary courses is advocated by some members of the committee. I think this course should be very sparingly given. In the language of the report, 'Care should be taken lest students who should be made into broad and intelligent teachers are turned into premature investigators.'

"The recommendations of the committee would lead to the organization in every college engaged in the preparation of high school teachers of history of a course, as follows:

1. Elementary History, in first two years, not to require more than 12 points.
2. Advanced courses, amounting to about 20 points.
3. Methods of teaching history, 2-4 points.
4. A pro-seminary may take 2-6 points.

"The student who has completed such a course must know the general outlines of two or three of the standard courses that he may have to teach. His training in methods and in limited fields will have prepared him to work up on his own account the courses in which his preparation has been slight. He will know what history is and what he is to produce in all his students regardless of the course. He will neither be more judicial nor better poised than nature has made him, but he will know how to see his limitations and how to use his powers to the end in view. He will know how to arrange his first classes and will be familiar with the outlines of many of his problems. And if his instructors have done their work conscientiously and with ability, he will be as well prepared for his task as a bachelor of arts can be."

Continuation of discussion by E. R. Sayre, Urbana:

"You will notice that my topic is, A Report on the Certification of Teachers of History in Illinois. I have not confined myself closely to the wording of the topic but have made my study more general by using preparation instead of certification. There are many features of interest and of value which the records do not show, but which I have tried to bring out by an examination of the actual work being done.

"For example—the records simply show that such and such a teacher has a Bachelor-of-Art's degree, without telling whether the major work was taken in history or some other subject. But if that teacher has taught History alone, it seems reasonable to infer that History was the major subject. On the other hand if such subjects as physics, chemistry, botany and history are taught, very likely science is the major subject.

"Before taking up my report proper I would like to be understood clearly as to my opinion of the meaning of a good preparation for the teaching of History. And to do that we must know how History has been, and is being taught.

"Formerly and to a large extent even now it has been considered unnecessary for a History teacher to have had any special training in that field. It was thought sufficient to have graduated from some good College, University or Normal School, no attention being paid as to what field the major work had been taken in. In other words it was believed that any ordinarily bright teacher, even though he had specialized in some other subject, could teach history acceptably. Under the old system and using the old ideas this was possible. Certainly a teacher would be poor if he were not able to read the lesson over in the text book and then hear the pupils recite.

"The whole difference lies in the interpretation of the purpose for which history is taught. Formerly history was taught almost entirely for purely ethical reasons and as a builder of character. That is: we should study the life of Washington, Grant, Napoleon, Alexander, that we might become leaders of armies; the lives of Hamilton, Jefferson, Gladstone, Bismarck, that we might become statesmen—and so on. This purpose is good so far as it goes. History should be taught for these reasons, but it should also be taught for the purpose of understanding the evolution of man, how History is made; and it should be disciplinary as well.

This can be done if we will accept History as a science, and as a science use laboratory methods to explain and understand it. The laboratory methods used in History are not so greatly different from those used in Chemistry and the other natural sciences. Instead of putting together elements in different proportions, we find sources and interpret and put them together to attain the ends for which we are working. This original work, this laboratory method, is that which I consider necessary for a good preparation for the understanding and the teaching of History.

"Now as to actual work being done and the preparation made by the History teachers in the High Schools of Illinois—I find that from a total of four hundred and eighty-three who teach history only three have Doctors degrees, all being from Chicago High Schools. Thirty-six have masters degrees—seven being from Chicago. One hundred and sixty-two have no degrees—all being in the state outside of Chicago.

"In other words less than one per cent have doctors degrees, nine per cent have masters degrees, fifty per cent bachelor degrees, and thirty-five per cent no degree whatever. In view of preparation as I have defined it, what do these figures mean? To have received the research training and understanding of history it is almost imperative for the teacher to have taken graduate work and yet from the records we find that less than ten per cent have done so. There are some who have taken one summer term or one semester of graduate work, but the reports are so indefinite that it has been found impossible to compile the exact statistics or to arrive at any definite conclusions concerning them. On the other hand it is probable that some of these have taken their advance degrees in some subject other than History.

"Of the fifty-five per cent who have bachelor degrees it is probable that very few have had any great amount of research work and in fact it is very likely that very many have not majored in History in their under-graduate work. Of those having no degrees, the proportion having had special training is sure to be very small indeed.

"The statistics sustain me in my statement that many have the idea that any ordinarily bright teacher can teach History, even without special training. They show that History is taught by the same teacher who has charge of a number of almost entirely unrelated subjects. As proof of this statement—out of the four hundred and eighty-three teachers there are only ninety-five who teach History alone, while there are one hundred and seventy-one who teach History and one subject; one hundred and eighteen who teach History and two subpects; forty-six who teach history and three subjects, and forty-two who teach History and four or more subjects. Truly not an impressive report when we consider that there are practically as many who teach History or three or more subjects as there are who teach History alone. That is: these eighty-six must have made special preparation in three or more subjects besides History or there is great probability that they are not teaching them well.

"A few examples will make this more clear. I find one teacher who has charge of classes in Zoology, Physics, Chemistry and History. It does not take a great deal of imagination for us to decide that he has specialized in science and is teaching History simply because it was considered an easy subject with which to fill in. But History is taught with various other subjects. Such combinations as Latin, German, Physics, Physiography, Astronomy and History all taught by one person. Or Physical-Geography, drawing, Botany, Domestic-science, Zoology, and History. Another has Science, Arithmetic, Geography, Civics, Algebra and History. Still another has Physics, Chemistry, Business-Law, Civics, Economics and History. These examples could be multiplied indefinitely, for they were picked almost at random from among the reports of the first fifty schools which I examined and they were not chosen from among High Schools having only three or four teachers, but from some having as many as twelve. These will, however, be sufficient to show the great dissimilarity of the subjects with which History is taught and to prove that the idea still prevails that History is an easy subject to handle.

"A rather interesting article along this line was published recently in the Daily Illini. A vote of the students of the University of Texas was taken to determine what was considered the most difficult course in the University, and History was the one which received the greatest vote. If the same test were given here at the University of Illinois, I believe the result would be very similar; but I doubt if it would be in most of the High Schools of the State as History is now taught.

"It is significant of the preparation that out of the eighty-six who teach

History and three or more subjects, nine-tenths are found among those having no degrees. Seemingly, the idea is that the less preparation the teacher has the more subjects he can teach.

"Lest the idea be given that this is a pessimistic report and that the outlook for the future is dark I wish to state that conditions were never better. From talks with faculty members of the University and with teachers of the state I have formed the conclusion that we are just beginning to realize the real importance of History. More schools are employing men and women who have specialized in this study, more teachers are taking a real interest in making history a study instead of simply a reading lesson than ever before. The leading educators of the country have long been working for a better and clearer knowledge of History. With all of these forces working together it is a matter of only a few years until conditions will be so greatly changed that a much brighter report than this can be given."

[This discussion fails to take account of the fact that there are a large number of high schools employing only three or four teachers. In such schools each teacher must teach more than one subject, and very many must teach three or four. There are about one hundred such schools in Illinois. The Editor.]

General discussion led by Supt. R. W. Bardwell. Importance of point is borne out by statistics. The report made by heads of colleges we should remember—They recommend (1) Course of Study in College; (2) Continue investigation by a committee. Dr. Johnson of Kansas spoke of preparation of teachers. 42 per cent. of teachers with degrees are teaching what they have specialized. As a principal, where can we get history teachers? A vote was taken on when the members present chose to be history teachers. 9 chose first year or before coming to college; 3 chose second year of their college work; 6 third year, 2 fourth year. Thus 20 out of 37 present had decided to teach history before or during college work. The report suggests:

Teacher's training vs. Seminar work.

2 to 6 hr. Seminar—2 to 4 in Methods of training teachers.

Methods should be emphasized.

Professor Larson explained that Training in Methods was made small because each University has its own education courses and psychology. Committee all agreed that every one who teaches a subject must have a thorough knowledge of his subject,—whether he has method or not.

Teachers should combine 2 or more subjects. History and English make a good combination. Where our high schools are small it is not possible to have enough teachers for the subjects. Circumstances are responsible for the conditions.

Miss Morehouse—Our small high schools have a prejudice against specialists. Small schools have economic problems which prevents paying of specialists.

Dr. E. B. Greene—Even some of the larger high schools do not group related subjects. Certain subjects have a very clear relation—civics, economics, literature, etc.

It was suggested that the popular opinion that history is not an important subject, especially as regards girls seems to still exist.

Superintendent Bardwell—History has advanced in emphasis placed upon it. Dr. Jones—N. E. A. Com. says—History teachers have greatest opportunity to teach the social problems.

Do educational courses aid in teaching was asked? Educational schools are too young to have sent out many. Has normal school teacher advantage over university graduate? Normal school teacher with thorough method training does not seem to have ideas so definite as those who get ideas from experiences.

Professor Duncalf said from his experience he thought in Texas, history teachers knew mtehod but not history, as was shown by work of freshmen. Superintendent should work out a test as to reasons for inefficient work in teachers.

Professor Dodd asked for action on recommendation of Committee on Illustrative Materials.

Professor Larson moved the Committee be continued with Professor Dodd as secretary in place of Professor Krey. Motion carried.

It was moved that Report of Committee be approved, referring especially to first two points in outline. Motion carried.

The last four points were agreed upon informally by the meeting.

Dr. Greene emphasized the point that University teachers are always glad to co-operate with high school workers and are always glad to help them in any possible way. He pointed out the help teachers would gain from becoming members of the various historical societies and subscribers to the History Teacher's Magazine.

The meeting adjourned.

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